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September 30, 1982

NIGMS Research Grants

by Study Section
by Program Area

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U.S. DEPARTMENT OF HEALTH
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Part

2.

September 30, 1982

NIGMS Research Grants

by Study Section
by Program Area

U.S. DEPARTMENT OF HEALTH
AND HUMAN SERVICES
Public Health Service
National Institutes of Health

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FOREWORD

This list of research grants supported by NIGMS replaces the list of September 30, 1981. It provides information on 2,879 awards with a total value of $296,649,364 which were "active" on September 30, 1982. These awards include projects for which the budget period has been extended from a prior year without the award of new funds.

Although these lists provide data as of September 30, changes in the lists, such as the extension of an award beyond September 30, 1982, and additions or terminations of awards effective as of that date but processed subsequent to tabulation of these reports, do occur. However, the frequency of such changes is small, and the need for timely publication far outweighs this small loss in completeness.

Grants are coded to the level of detail which the full 5-digit program area code permits, and the list which begins on page vii gives all program areas, whether or not they are in use at this time.

Thomas L. Mitchell
Chief, Data Management Systems Unit
Financial & Data Management Section
Office of Administrative Management
National Institute of General Medical Sciences

SPECIAL NOTES

Funds. The dollar amounts indicated for each grant represent the amount available for expenditure during the current grant year, not the original commitment or the amount encumbered. Commitments may be reduced by unexpended balances from the previous year, by negotiation, or by both. The use of the "amount available" was introduced in the December 31, 1967 listings.

Supplements. Supplemental awards are listed separately and the amount of the supplement is not included in the amount shown for the base grant. Supplements are indicated by an "S1" or "S2" (meaning first or second supplement) after the grant year. They appear either immediately preceding or immediately following the base grant. If a grant shows a base year and an "S2," the "S1" was either disapproved or withdrawn.

Initial Review Group. In the past few years a number of IRG's have been subdivided or reorganized. The IRG designations attached to specific grants, however, have not kept pace with these changes. The Index of Initial Review Groups, which begins on page xiv of each volume, indicates the combination of IRG's. This index is intended as a page reference for Table 3, but also serves as a glossary of IRG symbols.

Grant Year. A recent change in grant policy permits, in special cases, the extension of the terminal year of a grant period concurrent with the award of the first year of the new grant period. This means that it is now possible for two different grant years of the same grant to be active simultaneously.

Asterisks have been used to identify various items, as follows:

* - Centers, all tables

** - Institution totals in Table 5

*** - IRG totals in Table 3
- Program area totals in Table 4
- State totals in Table 5

**** - Grand total for the entire grant program, whenever it occurs.

EXPLANATORY NOTES - TABLE HEADINGS

DEPARTMENT. Department title in Table 5 is given as it appears on the award statement.

DIR. COSTS & TOTAL DOLLARS. Dollars available for expenditure in terms of direct costs and total dollars. Indirect costs may be obtained by subtraction.

END or END DATE. To save space, only the month and year in which the budget period is expected to terminate are indicated.

F-YRS. The number of additional or future years of support committed, as indicated on the award statement. For some grants for which no future support is indicated in these tables, new awards, in fact, may have been approved at an advisory council meeting subsequent to the issuance of the last award statement.

FY. The latest fiscal year from which an award was paid.

GRANT NO. The 5-digit number identifying the grant.

GRANT YR. The year of the award. In some cases, two years of a grant are active during the same period. This happens when the last year of a project period is extended to allow the investigator to take care of outstanding obligations and at the same time to go on with the current year's research.

GRANT T or TYPE. Type of application. The application type is identified by the standard numerical code used for this purpose; i.e., Type 1 is a competing new application, Type 2 is a competing renewal, Type 3 is a supplement, Type 5 is a non-competing continuation, etc.

INVESTIGATOR. The last name, first name, and middle initial of the investigator are given as they appear on the award statement.

IRG. The Initial Review Group (Study Section) to which the research grant application was assigned is identified by the standard alphabetic abbreviation used by DRG.

PROGRAM AREA. A numeric code is shown under the grant type in Tables 1, 3, and 4 and in a separate column in Tables 2 and 5. This code identifies the NIGMS program area to which the grant has been assigned. A dictionary for the code is given on page vii.

PROJECT TITLE. Space allowed for project titles is limited to 56 characters. On occasion, titles longer than this are received. If they are not edited by the time the lists are produced, the extra characters are cut off by the computer program.

I CELLULAR AND MOLECULAR BASIS OF DISEASE PROGRAM

Cellular Basis of Disease Section

22100 Basic Pathobiology

22200 Cell Regulation, Differentiation, and Growth

22250 Cell Organization, Motility, and Division

22300 Membrane Structure and Function

Molecular Basis of Disease Section

22400 Enzyme Catalysis and Regulation

22410 Glycoconjugates

22450 Bioenergetics

22500 Structural Studies of Proteins and Related Model Systems

22550 Diffraction Analysis of Proteins and Related Model Systems

22600 Theoretical Studies of Proteins and Related Model Systems

II GENETICS PROGRAM

Molecular and Medical Genetics Section

21100 Physical and Organic Chemistry of Nucleic Acids

21200 Replication, Recombination and Repair of DNA

21250 Mechanisms of Mutagenesis

21280 Extrachromosomal Inheritance

21310 Mechanism of Transcription

21320 Mechanism and Control of Translation and Assembly

21400 Human Medical and Behavior Genetics

21480 Cytogenetics and Gene Mapping

Genetics of Growth and Differentiation Section

21600 Chromosome Organiziation and Mechanics

21700 Development Genetics

21750 Control of Gene Expression

21780 Rearrangement of Genetic Elements

21800 Dynamics of Genes in Populations

Genetics Centers

*21910	*21914
*21911	*21915
*21912	*21916
*21913	*21917

*Subclassification is used for assignment to responsible program officer, rather than by subtopic.

III PHARMACOLOGICAL SCIENCES PROGRAM

Pharmacology

*11300 Centers, Program Projects

*11350 Drug Delivery, Absorption, Distribution, and Elimination

*11380 Modifiers of Drug Action

*11700 Centers, Program Projects

*11750 Drug Delivery, Absorption, Distribution, and Elimination

*11760 Drug Metabolism

*11770 Molecular Basis of Drug Action

*11780 Modifiers of Drug Action

*11790 Drug Toxicity, Including Venom Studies

*11810 Chemistry of Natural Materials

*11820 Chemical Processes of Biomedical Significance

*11830 Relations Between Chemical Structure and Biological Activity

*11840 Development and Application of Chemical Methodology and Instrumentation Applicable to Compounds of Biochemical Interest

*11850 Drug Delivery, Absorption, Distribution, and Elimination

*11860 Drug Metabolism

*11870 Molecular Basis of Drug Action

*11880 Modifiers of Drug Action

*11890 Drug Toxicity, Including Venom Studies

*The middle digit is used to indicate assignment to responsible program officer. The fourth digit represents the principal research area. All fifth digits are coded zero at this time.

III PHARMACOLOGICAL SCIENCES PROGRAM (Continued)

Biorelated Chemical Processes

*11900 Program Projects

*11910 Chemistry of Natural Materials

*11920 Chemical Processes of Biomedical Significance

*11930 Relations between Chemical Structure and Biological Activity

*11940 Development and Application of Chemical Methodology and Instrumentation Applicable to Compounds of Biochemical Interest

*The middle digit is used to indicate assignment to responsible program officer. The fourth digit represents the principal research area. All fifth digits are coded zero at this time.

IV PHYSIOLOGY AND BIOMEDICAL ENGINEERING PROGRAM

Biomedical Engineering and Instrument Development Section

12100 Mathematical Methods

12200 Physiological Systems Analysis

12300 Biomaterials

12320 Mechanical and Physico-chemical Properties of Tissues

12350 Prosthetics

12400 Physiological Instrumentation

12500 Biomedical Information Processing

12820 Analytical and Separation Techniques

12840 Spectroscopic Techniques

12900 Shared Instrumentation

12910 Ultrasonic Imaging and Effects

12920 Electromagnetic Imagine and Effects

12930 Microscopy and Microanalysis

12990 Cellular Instrumentation

IV PHYSIOLOGY AND BIOMEDICAL ENGINEERING PROGRAM (Continued)

Physiological Sciences Section

13100	Anesthesiology Program Projects
13100C*	Anesthesiology Centers
13200	Anesthesiology
13250	Anesthesiology New Investigator
13300	Trauma and Burns Program Projects
13300C*	Trauma and Burns Centers
13410	Trauma and Burns - Physiology
13420	Trauma and Burns - Biochemistry
13450	Trauma and Burns - New Investigator
13700	Behavioral Sciences and Adaptation
13900	General Medicine
13901	Epidemiology

*The indicator "C" denotes Research Center (P50).

V MINORITY ACCESS TO RESEARCH CAREERS PROGRAM

29050 MARC Supportive Awards

Index of Initial Review Groups (Study Sections), Table 3

Abbreviation and IRG		Page
AFY	(Applied Physiology and Orthopedics)	1
ALY	(Allergy and Immunology)	2
BBCA	(Molecular and Cellular Biophysics)	2
BBCB	(Biophysical Chemistry)	21
BCE	(Biochemical Endocrinology)	39
BIO	(Biochemistry)	39
BM	(Bacteriology and Mycology)	59
BMT	(Metallobiochemistry)	59
BNP	(Bio-organic and Natural Products Chemistry)	69
BPNB	(Basic Psychopharmacology and Neuropsychology Research Rev Comm)	72
BPO	(Bio-Psychology)	73
CBY	(Cell Biology)	74
CMBD	(Cellular and Molecular Basis of Disease)	83
CP	(Cellular Physiology Review Group)	84
CPA	(Chemical Pathology)	87
CTY	(Molecular Cytology)	88
CVB	(Cardiovascular and Renal)	95
DABR	(Drug Abuse Biomedical Research Review Committee)	96
EDC	(Epidemiology and Disease Control)	96
EH	(Blood Research Review Group)	96
EI	(Experimental Immunology)	97
END	(Endocrinology)	97
ET	(Experimental Therapeutics)	97
EVR	(Experimental Virology)	98
EXP	(Experimental Psychology)	99
GBD	(Genetic Basis of Disease Review Committee)	100
GEN	(Genetics)	100
GMA	(General Medicine A)	126
GMB	(General Medicine B)	127
HED	(Human Embryology and Development)	127
HEM	(Hematology)	127
IMB	(Immunobiology)	128
IMS	(Immunological Sciences)	128
MBC	(Microbial Physiology)	128
MBY	(Molecular Biology)	142
MCHA	(Medicinal Chemistry A)	158
MCHB	(Medicinal Chemistry B)	169
MET	(Metabolism)	170
MG	(Microbial Genetics Review Group)	170
MGN	(Mammalian Genetics)	182
NEUA	(Neurology A)	191
NEUB	(Neurology B)	191
NLS	(Neurological Sciences)	192
NSS	(No Initial Review Group)	192

Index of Initial Review Groups (Study Sections), Table 3 - Continued

Abbreviation and IRG		Page
NTN	(Nutrition)	193
ORTH	(Orthopedics and Musculoskeletal Study Section)	193
PB	(Physical Biochemistry)	194
PBC	(Pathobiological Chemistry)	202
PC	(Physiological Chemistry)	205
PHRA	(Pharmacology)	216
PHY	(Physiology)	221
PTHA	(Pathology A)	224
PTHB	(Pathology B)	225
PTR	(Pharmacological Sciences Review Committee)	226
RAD	(Radiation)	227
REB	(Reproductive Biology)	228
RNM	(Diagnostic Radiology)	229
SAT	(Surgery, Anesthesiology and Trauma)	230
SB	(Surgery and Bioengineering)	237
SGYA	(Surgery A)	238
SGYB	(Surgery B)	239
SRC	(Special Review Committee)	240
SSS	(Special Study Section)	242
TMP	(Tropical Medicine and Parasitology)	256
TOX	(Toxicology)	256
VID	(Visual Disorders Review Group)	258
VR	(Virology)	258

Index of Initial Review Groups (Study Sections), Table 3

IRG and Abbreviation	Page
Allergy and Immunology (ALY)	2
Applied Physiology and Orthopedics (AFY)	1
Bacteriology and Mycology (BM)	59
Basic Psychopharmacology & Neuropsychology Research Rev Comm (BPNB)	72
Biochemical Endocrinology (BCE)	39
Biochemistry (BIO)	39
Bio-organic and Natural Products Chemistry Review Group (BNP)	69
Biophysical Chemistry (BBCB)	21
Bio-Psychology (BPO)	73
Blood Research Review Group (EH)	96
Cardiovascular and Renal (CVB)	95
Cell Biology (CBY)	74
Cellular and Molecular Basis of Disease (CMBD)	83
Cellular Physiology Review Group (CP)	84
Chemical Pathology (CPA)	87
Diagnostic Radiology (RNM)	229
Drug Abuse Biomedical Research Review Committee (DABR)	96
Endocrinology (END)	97
Epidemiology and Disease Control (EDC)	96
Experimental Immunology (EI)	97
Experimental Psychology (EXP)	99
Experimental Therapeutics (ET)	97
Experimental Virology (EVR)	98
General Medicine A (GMA)	126
General Medicine B (GMB)	127
Genetic Basis of Disease Review Committee (GBD)	100
Genetics (GEN)	100
Hematology (HEM)	127
Human Embryology and Development (HED)	127
Immunobiology (IMB)	128
Immunological Sciences (IMS)	128
Mammalian Genetics (MGN)	182
Medicinal Chemistry A (MCHA)	158
Medicinal Chemistry B (MCHB)	169
Metabolism (MET)	170
Metallobiochemistry (BMT)	59
Microbial Genetics Review Group (MG)	170
Microbial Physiology (MBC)	128
Molecular and Cellular Biophysics (BBCA)	2
Molecular Biology (MBY)	142
Molecular Cytology (CTY)	88
Neurological Sciences (NLS)	192
Neurology A (NEUA)	191
Neurology B (NEUB)	191
No Initial Review Group (NSS)	192

Index of Initial Review Groups (Study Sections), Table 3 - Continued

IRG and Abbreviation	Page
Nutrition (NTN)	193
Orthopedic Musculoskeletal Study Section (ORTH)	193
Pathobiological Chemistry (PBC)	202
Pathology A (PTHA)	224
Pathology B (PTHB)	225
Pharmacology (PHRA)	216
Pharmacological Sciences Review Committee (PTR)	226
Physical Biochemistry (PB)	194
Physiological Chemistry (PC)	205
Physiology (PHY)	221
Radiation (RAD)	227
Reproductive Biology (REB)	228
Surgery, Anesthesiology and Trauma (SAT)	230
Surgery and Bioengineering (SB)	237
Special Review Committee (SRC)	240
Special Study Section (SSS)	242
Surgery A (SGYA)	238
Surgery B (SBYB)	239
Toxicology (TOX)	256
Tropical Medicine and Parasitology (TMP)	256
Virology (VR)	258
Visual Disorders Review Group (VID)	258

TABLE-3 RESEARCH GRANTS ACTIVE AS OF 09-30-82 BY INITIAL REVIEW GROUP

T	GRANT NUMBER / PROGRAM (FINE CODE)	INVESTIGATOR / PROJECT TITLE	GRANTEE INSTITUTION	CITY / STATE	FY	END-DATE	FUT-YRS AVAILABLE	IRG	SUB	DOLLARS DIRECT	DOLLARS TOTAL
5	R01 GM20201-09	KING, ALBERT I	WAYNE STATE UNIVERSITY		82	06-83	0	AFY			
	12320	STRUCTURAL AND MECHANICAL PROPERTIES OF THE SPINE		DETROIT / MICHIGAN						63,336	90,774
5	R01 GM25666-05	URBANIAK, JAMES R	DUKE UNIVERSITY		82	02-83	1	AFY			
	13410	TISSUE INJURY, REVASCULARIZATION AND TRANSPLANTATION		DURHAM / NORTH CAROLINA						101,474	152,211
5	R01 GM26395-03	PERRY, JACQUELIN	RANCHO LOS AMIGOS HOSPITAL		81	09-82	0	AFY			
	12320	THE DYNAMICS OF EMG-FORCE-MOVEMENT RELATIONSHIPS		DOWNEY / CALIFORNIA						83,101	99,504
2	R01 GM26608-03A1	LIU, Y KING	UNIVERSITY OF IOWA		82	02-83	2	AFY			
	12320	THE TRAUMATOLOGY OF THE HEAD AND SPINE		IOWA CITY / IOWA						84,493	112,806
5	R01 GM28827-03	PIZIALI, ROBERT L	STANFORD UNIVERSITY		82	06-83	0	AFY			
	12320	THE MECHANICS OF HUMAN BONE AND LONG BONES		STANFORD / CALIFORNIA						51,677	80,646
5	R01 GM28829-03	ROSE, ROBERT M	MASSACHUSETTS INSTITUTE OF TECHNOLOGY		82	07-83	0	AFY			
	12300	POLYETHYLENE BEHAVIOR IN JOINT REPLACEMENTS		CAMBRIDGE / MASSACHUSETTS						109,916	162,270
5	R01 GM29280-02	GOLDSMITH, WERNER	UNIVERSITY OF CALIFORNIA BERKELEY		82	06-83	3	AFY			
	12320	HEAD/NECK/UPPER TORSO RESPONSE TO DYNAMIC LOADING		BERKELEY / CALIFORNIA						42,009	59,611
5	R01 GM29785-02	GREENWALD, A SETH	CLEVELAND RESEARCH INSTITUTE		82	12-82	0	AFY			
	12300	BONE-IMPLANT INTERFACE ANALYSIS		CLEVELAND / OHIO						18,500	18,500
***	0	* CENTERS								0	0
***	8	NONCENTERS								554,506	776,322
***	8	TOTAL								554,506	776,322

TABLE-3 RESEARCH GRANTS ACTIVE AS OF 09-30-82 BY INITIAL REVIEW GROUP

T	GRANT NUMBER / PROGRAM (FINE CODE)	INVESTIGATOR / PROJECT TITLE	GRANTEE INSTITUTION	CITY	STATE	FY	END-DATE	FUT-YRS AVAILABLE	IRG	SUB	DOLLARS DIRECT	DOLLARS TOTAL
2	R01 GM20964-09 AI 21700	WEIGERT, MARTIN G THE GENETIC CONTROL OF ANTIBODY DIVERSITY AND EXPRESSION	INSTITUTE FOR CANCER RESEARCH	PHILADELPHIA	PENNSYLVANIA	82	12-82	4	ALY		161,544	224,196
2	R01 GM22766-07 AI 21750	BROWN, RONALD D GENERATION OF ANTIBODY DIVERSITY DURING DEVELOPMENT	UNIVERSITY OF CINCINNATI	CINCINNATI	OHIO	82	03-83	2	ALY		84,042	113,659
2	R01 GM24834-06 AI 13410	HENSON, PETER M RELEASE OF INJURIOUS CONSTITUENTS FROM CELLS	NATIONAL JEWISH HOSPITAL & RESEARCH CTR	DENVER	COLORADO	82	06-83	4	ALY		100,522	142,028
5	R01 GM29470-17 22410	GOLDSTEIN, IRWIN J PROTEIN-CARBOHYDRATE INTERACTION	UNIVERSITY OF MICHIGAN AT ANN ARBOR	ANN ARBOR	MICHIGAN	82	03-83	3	ALY		66,116	104,463
5	R01 GM29831-02 21750	OGATA, RONALD T STRUCTURE AND EXPRESSION OF COMPLEMENT GENES	SCRIPPS CLINIC AND RESEARCH FOUNDATION	LA JOLLA	CALIFORNIA	82	03-83	1	ALY		70,662	116,522
											0	0
											482,886	700,868
											482,886	700,868

*** 0 * CENTERS
*** 5 NONCENTERS
*** 5 TOTAL

T	GRANT NUMBER / PROGRAM (FINE CODE)	INVESTIGATOR / PROJECT TITLE	GRANTEE INSTITUTION	CITY	STATE	FY	END-DATE	FUT-YRS AVAILABLE	IRG	SUB	DOLLARS DIRECT	DOLLARS TOTAL
5	R01 GM06920-24 22550	LIPSCOMB, WILLIAM H STRUCTURE & FUNCTION OF BIOLOGICALLY ACTIVE MOLECULES	HARVARD UNIVERSITY	CAMBRIDGE	MASSACHUSETTS	82	08-83	2	BBCA		224,830	331,102
2	R01 GM10828-27 22550	JENSEN, LYLE H STRUCTURE OF BIOLOGICALLY IMPORTANT COMPOUNDS	UNIVERSITY OF WASHINGTON	SEATTLE	WASHINGTON	82	03-83	2	BBCA		76,870	97,047
5	R01 GM10840-24 21100	TINOCO, IGNACIO, JR STRUCTURE AND FUNCTION OF NUCLEIC ACIDS	UNIVERSITY OF CALIFORNIA BERKELEY	BERKELEY	CALIFORNIA	82	11-82	2	BBCA		125,533	164,448

T	GRANT NUMBER / PROGRAM (FINE CODE)	INVESTIGATOR / PROJECT TITLE	GRANTEE INSTITUTION	CITY / STATE	FY	END-DATE	FUT-YRS AVAILABLE	IRG SUB DOLLARS DIRECT	TOTAL
5	R01 GM10865-23 22600	ALBRECHT, ANDREAS C BASIC PHOTOELECTRIC STUDIES IN ORGANIC CONDENSED PHASE	CORNELL UNIVERSITY ITHACA	ITHACA NEW YORK	82	06-83	3	84,950	BBCA 128,406
5	R01 GM10880-23 22500	YANG, JEN T OPTICAL ROTATORY POWER OF BIOPOLYMERS	UNIVERSITY OF CALIFORNIA SAN FRANCISCO	SAN FRANCISCO CALIFORNIA	82	04-83	1	78,600	BBCA 102,687
5	R01 GM11223-20 22500	WEBER, GREGORIO PROTEIN CONFIGURATION BY FLUORESCENCE TECHNIQUES	UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN	URBANA ILLINOIS	82	04-83	0	125,980	BBCA 178,633
2	R01 GM11632-20 22300	BRAND, LUDWIG FLUORESCENCE PROBES IN STUDIES OF PROTEINS AND MEMBRANES	JOHNS HOPKINS UNIVERSITY	BALTIMORE MARYLAND	82	08-83	4	121,070	BBCA 171,380
2	R01 GM11916-19 21100	ZIMM, BRUNO H NUCLEIC ACIDS AND CHROMOSOMAL DNA	UNIVERSITY OF CALIFORNIA SAN DIECO	LA JOLLA CALIFORNIA	82	12-82	4	99,326	BBCA 127,668
5	R01 GM12159-19 22500	SCHACHMAN, HOWARD K STRUCTURES AND INTERACTIONS OF BIOLOGICAL MACROMOLECULES	UNIVERSITY OF CALIFORNIA BERKELEY	BERKELEY CALIFORNIA	82	04-83	1	125,600	BBCA 164,536
2	R01 GM12592-18 12840	HOCHSTRASSER, ROBIN M PHOTOPROCESSES IN THE ORGANIC SOLID STATE	UNIVERSITY OF PENNSYLVANIA	PHILADELPHIA PENNSYLVANIA	82	01-83	4	115,767	BBCA 156,566
5	R01 GM12832-14 11920	RITCHIE, CALVIN D NUCLEOPHILIC REACTIVITY	STATE UNIVERSITY OF NEW YORK AT BUFFALO	BUFFALO NEW YORK	81	12-82	0	26,113	BBCA 37,153
5	R01 GM12862-17 22500	EYRING, EDWARD M STRUCTURAL STUDIES OF NUCLEOSIDES AND NUCLEOTIDES	UNIVERSITY OF UTAH	SALT LAKE CITY UTAH	82	11-82	0	52,230	BBCA 75,734
5	R01 GM13191-18 22500	FEHER, GEORGE SPECTROSCOPIC INVESTIGATIONS OF BIOLOGICAL SYSTEMS	UNIVERSITY OF CALIFORNIA SAN DIEGO	SAN DIEGO LA JOLLA CALIFORNIA	82	06-83	3	128,580	BBCA 169,650
5	R01 GM13292-18 22400	HAMMES, GORDON G KINETICS OF PHYSIOLOGICALLY IMPORTANT REACTIONS	CORNELL UNIVERSITY ITHACA	ITHACA NEW YORK	82	11-82	2	140,980	BBCA 213,925
5	R01 GM13401-17 22500	TELLER, DAVID C ASSOCIATION REACTIONS OF ENZYMES	UNIVERSITY OF WASHINGTON	SEATTLE WASHINGTON	82	12-82	0	56,620	BBCA 75,475

TABLE-3 RESEARCH GRANTS ACTIVE AS OF 09-30-82 BY INITIAL REVIEW GROUP

T	GRANT NUMBER / PROGRAM (FINE CODE)	INVESTIGATOR / PROJECT TITLE	GRANTEE INSTITUTION	CITY / STATE	FY	END-DATE	FUT-YRS AVAILABLE	IRG SUB	DOLLARS DIRECT	DOLLARS TOTAL
5	R01 GM13684-16 22600	APPLEQUIST, JON B THEORY OF MOLECULAR OPTICAL PROPERTIES	IOWA STATE UNIVERSITY OF SCIENCE & TECH	AMES IOWA	82	08-83	2	BBCA	36,860	49,392
2	R01 GM14595-16 22300	SCHIFF, JEROME A STUDIES OF THE CONTINUITY OF CELLULAR ORGANELLES	BRANDEIS UNIVERSITY	WALTHAM MASSACHUSETTS	82	11-82	2	BBCA	110,800	154,033
2	R01 GM14603-16 22500	TIMASHEFF, SERGE N STRUCTURE AND INTERACTIONS OF PROTEINS IN SOLUTION	BRANDEIS UNIVERSITY	WALTHAM MASSACHUSETTS	82	11-82	4	BBCA	53,000	84,310
5	R01 GM14825-16 21100	CANTOR, CHARLES R NEW TECHNIQUES FOR COMPLEX MACROMOLECULAR ASSEMBLIES	COLUMBIA UNIVERSITY	NEW YORK NEW YORK	82	01-83	2	BBCA	86,370	144,756
5	R01 GM15225-14 21320	SIGLER, PAUL B STRUCTURAL ANALYSIS OF BIOLOGICAL MACROMOLECULES	UNIVERSITY OF CHICAGO	CHICAGO ILLINOIS	82	08-83	0	BBCA	82,905	136,052
5	R01 GM15539-15 21320	SCHIMMEL, PAUL R INVESTIGATIONS OF REACTIONS OF PHYSIOLOGICAL IMPORTANCE	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	CAMBRIDGE MASSACHUSETTS	82	05-83	1	BBCA	109,553	151,754
5	R01 GM15792-16 21100	VON HIPPEL, PETER H STRUCTURE AND RELATIONS OF PROTEINS AND NUCLEIC ACIDS	UNIVERSITY OF OREGON	EUGENE OREGON	82	12-82	0	BBCA	114,400	155,923
5	R01 GM16260-14 22600	WILLIAMS, DONALD E INTERMOLECULAR INTERACTIONS IN AMINO ACIDS AND PEPTIDES	UNIVERSITY OF LOUISVILLE	LOUISVILLE KENTUCKY	82	12-82	1	BBCA	34,800	52,444
2	R01 GM16966-13 22550	MARSH, RICHARD E CRYSTAL STRUCTURE STUDIES	CALIFORNIA INSTITUTE OF TECHNOLOGY	PASADENA CALIFORNIA	82	01-83	2	BBCA	50,330	74,488
5	R01 GM17371-10 21100	ARNOTT, STRUTHER MOLECULAR GEOMETRIES OF NUCLEIC ACIDS	PURDUE UNIVERSITY WEST LAFAYETTE	WEST LAFAYETTE INDIANA	82	08-83	1	BBCA	60,938	83,553
5	R01 GM17378-13 21100	SUNDARALINGAM, MUTTAIYA X-RAY STUDIES ON NUCLEIC ACID CONSTITUENTS	UNIVERSITY OF WISCONSIN MADISON	MADISON WISCONSIN	82	02-83	3	BBCA	49,959	69,823
5	R01 GM17533-21 21600	FASMAN, GERALD D PROTEIN NUCLEIC ACID INTERACTIONS: CHROMATIN STUDIES	BRANDEIS UNIVERSITY	WALTHAM MASSACHUSETTS	82	12-82	0	BBCA	99,217	157,322

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2	R01 GM17855-12 22500	BLOOMFIELD, VICTOR A PHYSICAL CHEMISTRY OF BACTERIAL VIRUSES	UNIVERSITY OF MINNESOTA OF MNPLS-ST PAUL	MINNEAPOLIS MINNESOTA	82	05-83	4	BBCA 117,880	147,393
5	R01 GM18092-09 22500	HOOKER, THOMAS M, JR CONFORMATIONS OF BIOLOGICALLY IMPORTANT MOLECULES	UNIVERSITY OF CALIFORNIA SANTA BARBARA	SANTA BARBARA CALIFORNIA	81	12-82	0	BBCA 42,000	55,020
5	R01 GM18362-05 11920	YANKWICH, PETER E MODELING THE TRANSITION STATE OF ENZYMIC REACTIONS	UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN	URBANA ILLINOIS	81	05-83	1	BBCA 31,464	45,234
2	R01 GM18455-09 21100	SUNDARALINGAM, MUTTAIYA X-RAY DIFFRACTION STUDIES OF RIBONUCLEIC ACIDS	UNIVERSITY OF WISCONSIN MADISON	MADISON WISCONSIN	82	06-83	2	BBCA 56,165	79,677
5	R01 GM18528-21 22500	KAMEN, MARTIN D MOLECULAR BASIS FOR FUNCTION OF IRON PROTEINS	UNIVERSITY OF CALIFORNIA SAN DIEGO	LA JOLLA CALIFORNIA	81	11-82	0	BBCA 88,853	115,124
2	R01 GM18694-09A1 22500	GOODMAN, MURRAY MODEL SYSTEMS FOR STUDIES OF PEPTIDE CONFORMATIONS	UNIVERSITY OF CALIFORNIA SAN DIEGO	LA JOLLA CALIFORNIA	82	03-83	2	BBCA 65,310	84,874
5	R01 GM18974-11 22300	GOODENOUGH, DANIEL A MOLECULAR BIOLOGY OF INTERCELLULAR COMMUNICATIONS	HARVARD UNIVERSITY	BOSTON MASSACHUSETTS	82	12-82	0	BBCA 45,997	90,062
5	R01 GM19059-11 21100	UHLENBECK, OLKE C STRUCTURE AND FUNCTION OF RIBONUCLEIC ACID	UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN	URBANA ILLINOIS	82	12-82	0	BBCA 71,780	102,215
2	R01 GM19060-10A1 21100	GRAY, DONALD M POLYNUCLEOTIDE AND POLYNUCLEOTIDE-PROTEIN STRUCTURES	UNIVERSITY OF TEXAS DALLAS	RICHARDSON TEXAS	82	06-83	4	BBCA 74,794	96,947
2	R01 GM19334-11 21600	OLINS, DONALD E PHYSICAL PROPERTIES OF ISOLATED NUCLEI AND CHROMOSOMES	UNIVERSITY OF TENNESSEE KNOXVILLE	KNOXVILLE TENNESSEE	82	08-83	4	BBCA 80,780	104,076
2	R01 GM19843-10 21320	CANTOR, CHARLES R STRUCTURAL ORGANIZATION OF RIBOSOMES AND LARGE RNAS	COLUMBIA UNIVERSITY	NEW YORK NEW YORK	82	11-82	4	BBCA 90,101	147,359
5	R01 GM19907-10 22500	MARKLEY, JOHN L NMR SPECTROSCOPY IN PROTEIN CHEMISTRY	PURDUE UNIVERSITY WEST LAFAYETTE	WEST LAFAYETTE INDIANA	82	05-83	0	BBCA 68,295	92,092

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5	R01 GM19988-22 22500	BALDWIN, ROBERT L PHYSICAL STUDIES OF NUCLEIC ACIDS AND PROTEINS	STANFORD UNIVERSITY	STANFORD	CALIFORNIA	82	12-82	0	BBCA		99,760	157,621
5	R01 GM20008-07 21100	HAMORI, EUGENE COMPUTER-BASED REPRESENTATION OF LONG DNA SEQUENCES	TULANE UNIVERSITY OF LOUISIANA	NEW ORLEANS	LOUISIANA	81	03-83	0	BBCA		20,290	27,189
5	R01 GM20080-10 11920	FOOTE, CHRISTOPHER S OXIDATION OF MODEL BIOLOGICAL SYSTEMS	UNIVERSITY OF CALIFORNIA LOS ANGELES	LOS ANGELES	CALIFORNIA	82	05-83	0	BBCA		53,246	69,752
2	R01 GM20117-19 11920	GROSSWEINER, LEONARD I FAST PHOTOSENSITIZED REACTIONS OF AROMATIC COMPOUNDS	ILLINOIS INSTITUTE OF TECHNOLOGY	CHICAGO	ILLINOIS	82	04-83	2	BBCA		52,908	86,472
5	R01 GM20168-10 22500	REDFIELD, ALFRED G STRUCTURAL KINETIC STUDIES BY NUCLEAR MAGNETIC RESONANCE	BRANDEIS UNIVERSITY	WALTHAM	MASSACHUSETTS	82	07-83	3	BBCA		104,164	186,295
5	R01 GM20195-25 21100	SCHELLMAN, JOHN A INTERACTIONS OF NUCLEOTIDES AND PROTEINS	UNIVERSITY OF OREGON	EUGENE	OREGON	82	03-83	0	BBCA		75,330	100,877
2	R01 GM20611-06 22550	DONOHUE, JERRY STRUCTURAL STUDIES: CONFORMATIONS AND HYDROGEN BONDS	UNIVERSITY OF PENNSYLVANIA	PHILADELPHIA	PENNSYLVANIA	82	11-82	2	BBCA		24,510	40,442
5	R01 GM20648-09 22200	BUTLER, WARREN L PHOTORECEPTOR PIGMENTS IN PHOTORESPONSIVE ORGANISMS	UNIVERSITY OF CALIFORNIA SAN DIEGO	LA JOLLA	CALIFORNIA	82	06-83	0	BBCA		52,543	69,935
5	R01 GM20861-09 21100	OLSON, WILMA K NUCLEIC ACID CONFORMATION, PROPERTIES, AND INTERACTIONS	RUTGERS THE STATE UNIV NEW BRUNSWICK	NEW BRUNSWICK	NEW JERSEY	82	07-83	0	BBCA		52,469	82,031
5	R01 GM21479-08 21100	JOHNSON, WALTER C, JR NUCLEIC ACID CONFORMATION AND FUNCTION	OREGON STATE UNIVERSITY	CORVALLIS	OREGON	82	11-82	3	BBCA		62,326	79,710
5	R01 GM21534-09 22550	SALEMME, FRANCIS R X-RAY STUDIES OF PROTEIN STRUCTURE	UNIVERSITY OF ARIZONA	TUCSON	ARIZONA	82	07-83	0	BBCA		57,730	79,075
5	R01 GM21589-08 21100	BERMAN, HELEN MODEL COMPOUNDS FOR NUCLEIC ACID INTERACTIONS	INSTITUTE FOR CANCER RESEARCH	PHILADELPHIA	PENNSYLVANIA	82	11-82	2	BBCA		56,927	85,407

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5	R01 GM21822-08 22550	VAN DER HELM, DICK STRUCTURE AND CONFORMATION OF SIDEROPHORES AND PEPTIDES	UNIVERSITY OF OKLAHOMA	NORMAN NORMAN	82 OKLAHOMA	04-83	2	BBCA 74,250	102,155
5	R01 GM21966-08 21100	CROTHERS, DONALD M THE PHYSICAL BASIS FOR MOLECULAR GENETIC PHENOMENA	YALE UNIVERSITY	NEW HAVEN	82 CONNECTICUT	01-83	1	BBCA 73,547	115,044
5	R01 GM22028-08 22600	PARR, ROBERT G THE QUANTUM THEORY OF MOLECULAR ISOELECTRONIC CHANGES	UNIVERSITY OF NORTH CAROLINA	CHAPEL HILL CHAPEL HILL	82 NORTH CAROLINA	02-83	2	BBCA 45,420	63,406
5	R01 GM22029-09 21100	WETMUR, JAMES G RENATURATION AND HYBRIDIZATION OF NUCLEIC ACIDS	MOUNT SINAI SCHOOL OF MEDICINE	NEW YORK NEW YORK	82 NEW YORK	08-83	0	BBCA 46,300	68,007
2	R01 GM22109-07 22500	STELLWAGEN, EARLE C AFFINITY CHROMATOGRAPHY FOR THE DINUCLEOTIDE FOLD	UNIVERSITY OF IOWA	IOWA CITY IOWA	82 IOWA	03-83	4	BBCA 70,830	92,805
2	R01 GM22441-07 21310	MATTHEWS, KATHLEEN S FLUORESCENCE AND PHYSICAL STUDIES OF REPRESSOR PROTEINS	RICE UNIVERSITY	HOUSTON TEXAS	82	03-83	4	BBCA 62,555	84,960
2	R01 GM22490-07 22550	KARTHA, GOPINATH CYCLIC PEPTIDES, STRUCTURE AND FUNCTION	ROSWELL PARK MEMORIAL INSTITUTE	BUFFALO NEW YORK	82	08-83	2	BBCA 47,980	68,132
5	R01 GM22548-20 11870	CRAVEN, BRYAN M CHARGE DENSITY IN BARBITURATE CRYSTAL STRUCTURES	UNIVERSITY OF PITTSBURGH	PITTSBURGH PENNSYLVANIA	81	12-82	0	BBCA 35,369	53,501
5	R01 GM22620-06 22500	ALLERHAND, ADAM CARBON-13 NMR STUDIES OF SPECIFIC SITES IN PROTEINS	INDIANA UNIVERSITY BLOOMINGTON	BLOOMINGTON INDIANA	81	02-83	0	BBCA 50,618	68,911
5	R01 GM22679-07 12820	BROWN, HARRY D MICROCALORIMETRIC DEFINITION OF CLINICAL REACTIONS	RUTGERS THE STATE UNIV NEW BRUNSWICK	NEW BRUNSWICK NEW JERSEY	81	03-83	0	BBCA 48,874	73,944
2	R01 GM22807-07 21320	ZIMMERMANN, ROBERT A PHOTOCHEMICAL PROBES OF RIBOSOME ARCHITECTURE	UNIVERSITY OF MASSACHUSETTS AMHERST	AMHERST MASSACHUSETTS	82	03-83	3	BBCA 78,188	110,202
5	R01 GM22827-06 21100	BLAKE, RICHARD D STRUCTURE AND INTERACTIONS OF DNA	UNIVERSITY OF MAINE AT ORONO	ORONO MAINE	82	06-83	0	BBCA 32,197	46,239

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2	R01 GM22873-08 21100	BARKLEY, MARY D PHYSICAL STUDIES OF PROTEIN-DNA INTERACTIONS	UNIVERSITY OF KENTUCKY	LEXINGTON	KENTUCKY	82	08-83	2	BBCA	69,494	101,307
2	R01 GM22937-07 22600	DAVIDSON, ERNEST R EXCITED STATES OF BIOMOLECULES	UNIVERSITY OF WASHINGTON	SEATTLE	WASHINGTON	82	06-83	2	BBCA	55,960	74,986
2	R01 GM22939-07 21100	TURNER, DOUGLAS H KINETIC AND SPECTROSCOPIC STUDIES OF NUCLEIC ACIDS	UNIVERSITY OF ROCHESTER	ROCHESTER	NEW YORK	82	02-83	4	BBCA	125,306	165,492
5	R01 GM22962-05 21320	WONG, KIN-PING RIBOSOMAL PROTEINS, PROTEIN-RNA INTERACTION & FUNCTION	UNIVERSITY OF KANSAS COL HLTH SCI & HOSP	KANSAS CITY	KANSAS	81	12-82	0	BBCA	48,350	64,399
5	R01 GM22969-07 21100	KEARNS, DAVID R STRUCTURAL STUDIES OF RNA	UNIVERSITY OF CALIFORNIA SAN DIEGO	LA JOLLA	CALIFORNIA	82	11-82	0	BBCA	70,187	90,395
5	R01 GM22994-07 22500	WOODY, ROBERT W OPTICAL PROPERTIES OF BIOLOGICAL MACROMOLECULES	COLORADO STATE UNIVERSITY	FORT COLLINS	COLORADO	82	11-82	0	BBCA	61,550	82,969
5	R01 GM23037-05 21320	AGRIS, PAUL F TRANSFER RNA STRUCTURE DURING PROTEIN SYNTHESIS	UNIVERSITY OF MISSOURI COLUMBIA	COLUMBIA	MISSOURI	82	03-83	0	BBCA	36,211	49,066
2	R01 GM23039-06 22500	DAVIS, LAWRENCE C DIRECT SCANNING GEL FILTRATION ON INTERACTING SYSTEMS	KANSAS STATE UNIVERSITY	MANHATTAN	KANSAS	82	05-83	2	BBCA	18,947	26,905
2	R01 GM23303-07 22500	MATTHEWS, CHARLES R REVERSIBLE UNFOLDING OF NATIVE AND MUTANT PROTEINS	PENNSYLVANIA STATE UNIVERSITY UNIV PARK	UNIVERSITY PARK	PENNSYLVANIA	82	06-83	2	BBCA	76,786	97,742
5	R01 GM23467-06 21310	RECORD, M THOMAS, JR ION EFFECTS ON INTERACTIONS OF RNA POLYMERASE & DNA	UNIVERSITY OF WISCONSIN MADISON	MADISON	WISCONSIN	82	12-82	0	BBCA	64,356	86,873
2	R01 GM23509-04 21100	BRESLAUER, KENNETH J DNA POLYMORPHISM IN SOLUTION: A THERMODYNAMIC STUDY	RUTGERS THE STATE UNIV NEW BRUNSWICK	NEW BRUNSWICK	NEW JERSEY	82	03-83	2	BBCA	62,751	96,842
5	R01 GM23563-05 21200	HOSODA, JUNKO THE STRUCTURE OF HELIX DESTABILIZING PROTEIN	UNIVERSITY OF CALIFORNIA BERKELEY	BERKELEY	CALIFORNIA	82	03-83	1	BBCA	65,647	93,875

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5	R01 GM23599-06 22500	HORROCKS, WILLIAM D, JR NEW LANTHANIDE PROBES OF PROTEIN STRUCTURE	PENNSYLVANIA STATE UNIVERSITY	UNIV PARK UNIVERSITY PARK PENNSYLVANIA	82	12-82	0	BBCA	54,971	74,221
5	R01 GM23670-06 22600	BATES, RICHARD D, JR MOLECULAR DYNAMICS OF HYDROGEN BONDING IN FLUIDS	GEORGETOWN UNIVERSITY	WASHINGTON DIST OF COL	82	12-82	0	BBCA	38,860	54,316
2	R01 GM23697-07 21310	WOODY, ROBERT W SPECTROSCOPIC STUDIES OF RNA POLYMERASE MECHANISM	COLORADO STATE UNIVERSITY	FORT COLLINS COLORADO	82	05-83	2	BBCA	61,610	81,582
5	R01 GM23765-05 12840	ROBINSON, G WILSE SUBNANOSECOND PRIMARY EVENTS IN BIOLOGY	TEXAS TECH UNIVERSITY	LUBBOCK TEXAS	82	06-83	1	BBCA	35,820	45,491
2	R01 GM23942-04 22600	RHODES, WILLIAM C ELECTRONIC RESPONSE PROPERTIES OF BIOPOLYMERS	FLORIDA STATE UNIVERSITY	TALLAHASSEE FLORIDA	82	03-83	2	BBCA	31,860	46,038
2	R01 GM24030-07 21600	LERMAN, LEONARD S STRATEGY FOR THE CHARACTERIZATION OF THE HUMAN GENOME	STATE UNIVERSITY OF NEW YORK AT ALBANY	ALBANY NEW YORK	82	08-83	2	BBCA	108,743	147,401
5	R01 GM24238-05 21250	WANG, SHIH Y CHEMICAL ANALYSIS OF NON-DIMERIC UV DAMAGE IN DNA	JOHNS HOPKINS UNIVERSITY	BALTIMORE MARYLAND	82	03-83	2	BBCA	49,858	74,787
5	R01 GM24443-05 21100	PROHOFSKY, EARL W MOTIONAL DYNAMICS OF DNA HELICES	PURDUE UNIVERSITY WEST LAFAYETTE	WEST LAFAYETTE INDIANA	82	12-82	0	BBCA	61,010	85,414
2	R01 GM24486-06 HL 22500	ACKERS, GARY K REGULATORY INTERACTIONS IN PROTEIN/NUCLEIC ACID SYSTEMS	JOHNS HOPKINS UNIVERSITY	BALTIMORE MARYLAND	82	08-83	4	BBCA	160,822	224,757
5	R01 GM24492-05 22600	WARSHEL, ARIEH THEORETICAL STUDIES OF ENZYMATIC REACTIONS	UNIVERSITY OF SOUTHERN CALIFORNIA	LOS ANGELES CALIFORNIA	82	12-82	0	BBCA	37,860	54,356
5	R01 GM24494-05 21100	BORER, PHILIP N BASIC NUCLEIC ACID STRUCTURES: FORM AND INTERACTION	UNIVERSITY OF CALIFORNIA IRVINE	IRVINE CALIFORNIA	82	02-83	1	BBCA	34,356	44,417
5	R01 GM24526-05 22550	JEFFREY, GEORGE A STRUCTURAL STUDIES OF CARBOHYDRATES	UNIVERSITY OF PITTSBURGH	PITTSBURGH PENNSYLVANIA	82	12-82	0	BBCA	69,080	104,482

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5	R01 GM24570-05 22500	MATTHEWS, CHARLES R CHEMICAL TRAPPING OF INTERMEDIATES IN PROTEIN FOLDING	PENNSYLVANIA STATE UNIVERSITY UNIV PARK	UNIVERSITY PARK	PENNSYLVANIA	82	12-82	1	BBCA	30,545	40,422
5	R01 GM24599-05 22250	YARBROUGH, LYNWOOD R MOLECULAR MECHANISMS OF TUBULIN-LIGAND INTERACTIONS	UNIVERSITY OF KANSAS COL HLTH SCI & HOSP	KANSAS CITY	KANSAS	82	04-83	1	BBCA	50,356	66,841
2	R01 GM24623-04 22550	HAMILTON, JEAN A STRUCTURAL STUDIES ON COMPLEXES BY X-RAY DIFFRACTION	INDIANA UNIV-PURDUE UNIV AT INDIANAPOLIS	INDIANAPOLIS	INDIANA	82	03-83	2	BBCA	38,810	55,094
2	R01 GM24760-04 22500	RUPLEY, JOHN A MACROMOLECULAR SOLVATION	UNIVERSITY OF ARIZONA	TUCSON	ARIZONA	82	11-82	4	BBCA	59,930	84,840
5	R01 GM24832-06 11920	OLAH, GEORGE A HYDROCARBONS & THEIR DERIVATIVES AS BIOALKYLATING AGENTS	UNIVERSITY OF SOUTHERN CALIFORNIA	LOS ANGELES	CALIFORNIA	82	06-83	0	BBCA	93,050	142,367
5	R01 GM24852-03 22500	GLICKSON, JERRY D NMR TECHNIQUES FOR DELINEATING PEPTIDE CONFORMATIONS	UNIVERSITY OF ALABAMA IN BIRMINGHAM	BIRMINGHAM	ALABAMA	81	11-82	0	BBCA	42,348	57,170
2	R01 GM24862-04 22410	STEVENS, EUGENE S CHARACTERIZATION OF BIOPOLYMERS BY VACUUM UV CD	STATE UNIVERSITY NEW YORK BINGHAMTON	BINGHAMTON	NEW YORK	82	03-83	2	BBCA	40,422	57,916
5	R01 GM24864-08 21100	PARTHASARATHY, RENGACHARY STRUCTURE AND FUNCTION OF MODIFIED NUCLEOSIDES OF RNA	ROSWELL PARK MEMORIAL INSTITUTE	BUFFALO	NEW YORK	82	11-82	0	BBCA	39,210	53,163
5	R01 GM24967-03 22400	AULD, DAVID S LOW TEMPERATURE ENZYME DYNAMICS	HARVARD UNIVERSITY	BOSTON	MASSACHUSETTS	82	08-83	1	BBCA	31,235	48,414
5	R01 GM24981-03 21320	HAMILTON, MARY G SUBFRACTIONATION OF RAT LIVER RIBOSOMAL SUBUNITS	SLOAN-KETTERING INSTITUTE FOR CANCER RES	NEW YORK	NEW YORK	81	12-82	0	BBCA	45,805	67,791
5	R01 GM25150-05 11870	ARORA, SATISH K STRUCTURAL INVESTIGATIONS OF MODE OF ACTION OF DRUGS	UNIVERSITY OF ARIZONA	TUCSON	ARIZONA	82	02-83	0	BBCA	31,999	45,759
5	R01 GM25177-05 22500	HOROWITZ, PAUL M STRUCTURE-FUNCTION IN THE ENZYME RHODANESE	UNIVERSITY OF TEXAS HLTH SCI CTR SAN ANT	SAN ANTONIO	TEXAS	82	03-83	1	BBCA	37,560	49,406

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2	R01 GM25190-04 22300	LOEW, LESLIE M A CONCERTED SEARCH FOR ELECTROCHROMIC MEMBRANE PROBES	STATE UNIVERSITY NEW YORK BINGHAMTON	BINGHAMTON NEW YORK	82	11-82	3	BBCA	70,473	95,005
5	R01 GM25217-05 22550	DONIACH, SEBASTIAN X-RAY STUDIES OF CA AND TB IONS IN BIOLOGICAL SYSTEMS	STANFORD UNIVERSITY	STANFORD CALIFORNIA	82	03-83	1	BBCA	43,730	69,093
5	R01 GM25463-03 22500	HALL, BARRY T PROTEIN FOLDING--THE EFFECT OF SEQUENCE	UNIVERSITY OF TEXAS HLTH SCI CTR HOUSTON	HOUSTON TEXAS	81	11-82	0	BBCA	26,683	36,823
2	R01 GM25498-04 21750	REVZIN, ARNOLD REGULATORY PROTEIN-DNA INTERACTIONS--PHYSICAL STUDIES	MICHIGAN STATE UNIVERSITY	EAST LANSING MICHIGAN	82	12-82	2	BBCA	64,778	89,484
2	R01 GM25512-04A1 21320	SCHWEIZER, MARTIN P CARBON-13 NMR STUDIES OF TRNA SYNTHETASE INTERACTIONS	UNIVERSITY OF UTAH	SALT LAKE CITY UTAH	82	06-83	2	BBCA	65,937	88,166
2	R01 GM25663-04 21600	SMALL, ENOCH W FLUORESCENE STUDIES OF NUCLEOSOME STRUCTURAL CHANGES	OREGON STATE UNIVERSITY	CORVALLIS OREGON	82	11-82	2	BBCA	56,220	72,768
5	R01 GM25671-05 21200	ROSENBERG, JOHN M STRUCTURE AND FUNCTION OF ECORI ENDONUCLEASE	UNIVERSITY OF PITTSBURGH	PITTSBURGH PENNSYLVANIA	82	06-83	1	BBCA	53,899	81,146
5	R01 GM25693-05 22300	MAUZERALL, DAVID CHARGE TRANSFER ACROSS INTERFACES OF BIOLOGICAL SYSTEMS	ROCKEFELLER UNIVERSITY	NEW YORK NEW YORK	82	06-83	1	BBCA	66,609	104,576
5	R01 GM25698-16 22300	GRIFFITH, O HAYES SPIN LABELING AND MEMBRANE STRUCTURE	UNIVERSITY OF OREGON	EUGENE OREGON	82	05-83	0	BBCA	98,633	133,944
5	R01 GM25889-03 21100	GILL, STANLEY J THERMODYNAMIC STUDY OF PROTEIN-NUCLEIC ACID INTERACTIONS	UNIVERSITY OF COLORADO AT BOULDER	BOULDER COLORADO	81	11-82	0	BBCA	41,054	57,476
5	R01 GM26004-04 22450	LAUFER, DANIEL A CYCLOAMYLOSE COMPLEXES	UNIVERSITY OF MASSACHUSETTS BOSTON	BOSTON MASSACHUSETTS	82	05-83	1	BBCA	33,079	58,006
2	R01 GM26050-03 22500	MACCOLL, ROBERT J STRUCTURE AND FUNCTION OF PHOTOSYNTHETIC PIGMENTS	NEW YORK STATE DEPARTMENT OF HEALTH	ALBANY NEW YORK	82	03-83	2	BBCA	29,640	44,636

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5	R01 GM26078-03 22500	MUKERJEE, PASUPATI MICROENVIRONMENTAL STUDIES ON PHOSPHOLIPID SYSTEMS	UNIVERSITY OF WISCONSIN MADISON	MADISON WISCONSIN	81	12-82	0	BBCA	22,653	32,394
2	R01 GM26133-04 22450	WARDEN, JOSEPH T ESR STUDIES OF ELECTRON TRANSFORT IN PHOTOSYSTEM 2	RENSSELAER POLYTECHNIC INSTITUTE	TROY NEW YORK	82	08-83	2	BBCA	78,433	107,684
2	R01 GM26242-04 22500	WOODWARD, CLARE K SINGLE PROTON EXCHANGE KINETICS IN PROTEINS	UNIVERSITY OF MINNESOTA OF MNPLS-ST PAUL	MINNEAPOLIS MINNESOTA	82	03-83	2	BBCA	48,220	65,579
5	R01 GM26305-04 22450	CROFTS, ANTONY R THE PROTON PUMPS OF PHOTOSYNTHETIC BACTERIA	UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN	URBANA ILLINOIS	82	03-83	0	BBCA	75,709	106,962
2	R01 GM26494-04 21320	JOHNSON, ARTHUR E THE INTERACTION OF AA-TRNA WITH EF-TU AND RIBOSOMES	UNIVERSITY OF OKLAHOMA NORMAN	NORMAN OKLAHOMA	82	03-83	2	BBCA	76,555	99,427
5	R01 GM26525-03 22600	DAVID, CARL W POLYPEPTIDE SOLUTION CONFORMATION PREDICTION	UNIVERSITY OF CONNECTICUT STORRS	STORRS CONNECTICUT	81	09-82	0	BBCA	48,841	69,038
2	R01 GM26588-07 22600	BERNE, BRUCE J MOLECULAR DYNAMICS OF AQUEOUS SOLUTIONS	COLUMBIA UNIVERSITY	NEW YORK NEW YORK	82	04-83	4	BBCA	58,430	97,929
2	R01 GM26669-04 22300	RAYFIELD, GEORGE W MEMBRANE BIOPHYSICS	UNIVERSITY OF OREGON	EUGENE OREGON	82	08-83	2	BBCA	59,889	69,674
2	R01 GM26715-04 22500	SNYDER, GRAYSON H STRATEGIES FOR DIRECTING DISULFIDE PAIRING IN PROTEINS	STATE UNIVERSITY OF NEW YORK AT BUFFALO	BUFFALO NEW YORK	82	06-83	2	BBCA	68,038	85,733
5	R01 GM27002-06 21100	BOBST, ALBERT M SPIN ASSAY FOR NUCLEIC ACID BINDING PROTEINS	UNIVERSITY OF CINCINNATI	CINCINNATI OHIO	82	02-83	2	BBCA	47,698	66,777
5	R01 GM27024-03 22550	CZERWINSKI, EDMUND W STRUCTURAL STUDIES OF ISOCITRATE DEHYDROGENASE	UNIVERSITY OF TEXAS MED BR GALVESTON	GALVESTON TEXAS	82	12-82	0	BBCA	41,450	55,083
5	R01 GM27036-03 22500	BRYAN, WILLIAM P THE ROLE OF WATER IN PROTEIN STRUCTURE AND FUNCTION	INDIANA UNIV-PURDUE UNIV AT INDIANAPOLIS	INDIANAPOLIS INDIANA	82	03-83	0	BBCA	36,510	52,574

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5	R01 GM27046-03 21100	ALLEN, FRITZ S AN ELECTRIC DICHROISM STUDY OF DNA & DNA-DRUG ADDUCTS	UNIVERSITY OF NEW MEXICO	ALBUQUERQUE ALBUQUERQUE NEW MEXICO	82	12-82	0	BBCA		28,029	37,586
5	R01 GM27170-03 22300	ROESKE, ROGER W CHARACTERIZATION OF MEMBRANE-ACTIVE PEPTIDES	INDIANA UNIV-PURDUE UNIV AT INDIANAPOLIS	INDIANAPOLIS INDIANA	82	11-82	0	BBCA		65,890	88,954
5	R01 GM27176-03 21320	WISHNIA, ARNOLD PRESSURE-JUMP STUDIES OF RIBOSOMES	STATE UNIVERSITY NEW YORK STONY BROOK	STONY BROOK NEW YORK	82	12-82	0	BBCA		42,701	63,177
5	R01 GM27201-03 21320	HILL, WALTER E PHYSICAL STUDIES OF RIBOSOMAL PROTEINS	UNIVERSITY OF MONTANA	MISSOULA MONTANA	82	12-82	0	BBCA		54,414	75,908
5	R01 GM27292-03 22300	WALLACE, BONNIE A STRUCTURAL BASIS OF MEMBRANE PROTEIN FUNCTIONS	COLUMBIA UNIVERSITY	NEW YORK NEW YORK	82	11-82	1	BBCA		38,989	64,129
5	R01 GM27350-03 22500	LOVE, L J CLINE CHARGE TRANSFER COMPLEXES IN INVERTED MICELLES	SETON HALL UNIVERSITY	SOUTH ORANGE NEW JERSEY	82	08-83	0	BBCA		8,844	13,116
5	R01 GM27357-03 22500	PRASAD, PARAS N REACTION DYNAMICS OF SOLIDS OF BIOLOGICAL INTEREST	STATE UNIVERSITY OF NEW YORK AT BUFFALO	BUFFALO NEW YORK	82	12-82	0	BBCA		29,220	43,469
5	R01 GM27493-04 22400	CHLEBOWSKI, JAN ASSEMBLY, ACTIVATION AND REGULATION OF ENZYMES	VIRGINIA COMMONWEALTH UNIVERSITY	RICHMOND VIRGINIA	82	05-83	1	BBCA		40,614	59,986
5	R01 GM27633-04 12990	WARE, BENNIE R AUTOMATED ELECTROPHORETIC ANALYSIS OF LIVING CELLS	SYRACUSE UNIVERSITY AT SYRACUSE	SYRACUSE NEW YORK	82	08-83	1	BBCA		61,525	95,005
5	R01 GM27651-03 21100	VAUGHAN, WORTH E ION AND POLYION DYNAMICS IN DNA SOLUTIONS	UNIVERSITY OF WISCONSIN MADISON	MADISON WISCONSIN	82	02-83	0	BBCA		23,589	30,751
5	R01 GM27681-03 21100	DERVAN, PETER B MOLECULAR RECOGNITION OF DNA & RNA BY POLYINTERCALATORS	CALIFORNIA INSTITUTE OF TECHNOLOGY	PASADENA CALIFORNIA	82	03-83	0	BBCA		49,729	69,265
5	R01 GM27738-03 22500	BOXER, STEVEN G BIOMOLECULAR STRUCTURE/DYNAMICS--NUCLEAR POLARIZATION	STANFORD UNIVERSITY	STANFORD CALIFORNIA	82	07-83	0	BBCA		36,116	57,063

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5	R01 GM27743-03 11920	BARTMESS, JOHN E HYDROGEN BONDING STRENGTHS OF SINGLE MOLECULES TO ANIONS	INDIANA UNIVERSITY BLOOMINGTON	BLOOMINGTON	INDIANA	82	03-83	0	BBCA	20,451	27,953
5	R01 GM27753-03 22300	CABANTCHIK, Z IOAV ANION TRANSPORT: MOLECULAR DISSECTION OF PROCESSES	HEBREW UNIVERSITY OF JERUSALEM	JERUSALEM	ISRAEL	82	04-83	0	BBCA	42,088	42,088
5	R01 GM27767-03 21100	LIM, EDWARD C ELECTRONIC RELAXATION OF DNA BASES	WAYNE STATE UNIVERSITY	DETROIT	MICHIGAN	82	03-83	0	BBCA	34,704	50,394
5	R01 GM27825-03 22500	FLEMING, GRAHAM R TIME RESOLVED STUDIES OF PROTEIN DYNAMICS	UNIVERSITY OF CHICAGO	CHICAGO	ILLINOIS	82	03-83	0	BBCA	46,455	72,934
5	R01 GM27953-03 22400	LANGERMAN, NEAL R ENERGY STATE OF FLAVOPROTEINS	UTAH STATE UNIVERSITY	LOGAN	UTAH	82	06-83	0	BBCA	30,256	40,671
5	R01 GM27955-03 22600	DEL BENE, JANET E HYDROGEN BONDING, H+ & LI+ ASSOCIATION--MOLECULAR ORBIT	YOUNGSTOWN STATE UNIVERSITY	YOUNGSTOWN	OHIO	82	07-83	0	BBCA	26,340	32,045
5	R01 GM28069-03 21750	WU, CHENG-WEN MECHANISM AND REGULATION OF GENE TRANSCRIPTION	STATE UNIVERSITY NEW YORK STONY BROOK	STONY BROOK	NEW YORK	82	12-82	2	BBCA	108,644	161,482
5	R01 GM28070-09 22300	GAFFNEY, BETTY J SPIN LABELING RECEPTORS ON NORMAL AND MALIGNANT CELLS	JOHNS HOPKINS UNIVERSITY	BALTIMORE	MARYLAND	82	04-83	0	BBCA	58,780	88,170
5	R01 GM28093-03 21100	BLOOMFIELD, VICTOR A POLYAMINE-POLYNUCLEOTIDE INTERACTIONS	UNIVERSITY OF MINNESOTA OF MNPLS-ST PAUL	MINNEAPOLIS	MINNESOTA	82	06-83	1	BBCA	43,387	60,308
2	R01 GM28139-03 22500	LEE, JOHN W STRUCTURE AND INTERACTIONS OF LUMAZINE PROTEIN	UNIVERSITY OF GEORGIA	ATHENS	GEORGIA	82	11-82	2	BBCA	50,540	69,594
5	R01 GM28166-03 22500	DARNALL, DENNIS W SPECTROSCOPIC RULERS AS PROBES OF HUMAN SERUM ALBUMIN	NEW MEXICO STATE UNIVERSITY LAS CRUCES	LAS CRUCES	NEW MEXICO	82	07-83	0	BBCA	38,952	61,934
5	R01 GM28190-03 22500	SCHUSTER, GARY B PROTON TRANSFER REACTIONS AND PROTON MOBILITY IN WATER	UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN	URBANA	ILLINOIS	82	06-83	0	BBCA	30,250	43,076

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5	R01 GM28209-03 12930	WAMPLER, JOHN E A UNIQUE LOW-LIGHT IMAGE PROCESSING MICROSCOPE SYSTEM	UNIVERSITY OF GEORGIA	ATHENS GEORGIA	82	06-83	0	BBCA	48,466	66,738
5	R01 GM28222-03 22500	VALENTINE, JOAN S THE HISTIDYL IMIDAZOLE LIGAND IN METALLOPROTEINS	UNIVERSITY OF CALIFORNIA LOS ANGELES	LOS ANGELES CALIFORNIA	82	12-82	1	BBCA	65,080	85,255
5	R01 GM28250-03 22300	KOPPEL, DENNIS E GLYCOPROTEIN MOBILITIES-MATRIX CONTROLS	UNIVERSITY OF CONNECTICUT HEALTH CENTER	FARMINGTON CONNECTICUT	82	06-83	0	BBCA	40,010	56,665
5	R01 GM28293-03 21100	HAGERMAN, PAUL J FLEXIBILITY OF DNA	UNIVERSITY OF COLORADO HLTH SCIENCES CTR	DENVER COLORADO	82	06-83	0	BBCA	36,591	46,471
5	R01 GM28386-02 22500	STEPHENS, PHILIP J CHIROPTICAL SPECTROSCOPY OF METALLOPROTEINS	UNIVERSITY OF SOUTHERN CALIFORNIA	LOS ANGELES CALIFORNIA	82	01-83	3	BBCA	55,250	78,549
5	R01 GM28533-02 21100	TURNER, DOUGLAS H LASER CROSS LINKING OF PROTEINS AND NUCLEIC ACIDS	UNIVERSITY OF ROCHESTER	ROCHESTER NEW YORK	82	11-82	1	BBCA	25,990	40,446
1	R01 GM28619-01A1 22500	DIEM, MAX NOVEL PROBES FOR SOLUTION CONFORMATION OF PEPTIDES	HUNTER COLLEGE	NEW YORK NEW YORK	82	01-83	2	BBCA	65,700	85,013
5	R01 GM28731-02 22500	HENSLEY, PRESTON QUATERNARY INTERACTIONS IN A MULTIENZYME COMPLEX	GEORGETOWN UNIVERSITY	WASHINGTON DIST OF COL	82	11-82	1	BBCA	28,280	39,650
5	R01 GM28789-02 22450	DISMUKES, G CHARLES INTERACTION OF COFACTORS IN PHOTOSYNTHETIC ELECTRON TRAN	PRINCETON UNIVERSITY	PRINCETON NEW JERSEY	82	03-83	1	BBCA	36,160	62,220
5	R01 GM28793-31 22500	CANN, JOHN R PHYSICOCHEMISTRY AND IMMUNOLOGY OF MACROMOLECULES	UNIVERSITY OF COLORADO HLTH SCIENCES CTR	DENVER COLORADO	82	05-83	3	BBCA	96,150	119,707
5	R01 GM28878-03 21100	LE BRETON, PIERRE R UV PHOTOELECTRON STUDIES OF ELECTRONIC STRUCTURE	UNIVERSITY OF ILLINOIS CHICAGO CIRCLE	CHICAGO ILLINOIS	82	08-83	0	BBCA	42,036	61,179
5	R01 GM29047-02 21100	HOGAN, MICHAEL E MULTINUCLEAR NMR STUDIES OF DNA INTERNAL MOTIONS	PRINCETON UNIVERSITY	PRINCETON NEW JERSEY	82	03-83	1	BBCA	40,538	65,074

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5	R01 GM29048-02 21320	DRAPER, DAVID E RIBOSOMAL RNA STRUCTURE AND INTERACTIONS	JOHNS HOPKINS UNIVERSITY	BALTIMORE	MARYLAND	82	03-83	1	BBCA 32,638	48,199
1	R01 GM29072-01A1 22500	KOLLMAN, PETER A MODELING PROTEIN - SMALL MOLECULE INTERACTIONS	UNIVERSITY OF CALIFORNIA SAN FRANCISCO	SAN FRANCISCO	CALIFORNIA	82	01-83	2	BBCA 50,470	65,283
5	R01 GM29078-02 22500	KUPKE, DONALD W CALMODULIN-CA++-MG++ INTERACTIONS: VOLUME PROPERTIES	UNIVERSITY OF VIRGINIA CHARLOTTESVILLE	CHARLOTTESVILLE	VIRGINIA	82	03-83	0	BBCA 40,920	58,670
5	R01 GM29079-02 21100	PACK, GEORGE R THEORY OF CATION INDUCED CONFORMATION CHANGES IN DNA	ROCKFORD SCHOOL OF MEDICINE	ROCKFORD	ILLINOIS	82	03-83	1	BBCA 39,948	62,718
5	R01 GM29109-02 21750	PTASHNE, MARK S STRUCTURAL STUDY OF REPRESSOR-OPERATOR INTERACTIONS	HARVARD UNIVERSITY	CAMBRIDGE	MASSACHUSETTS	82	03-83	1	BBCA 72,913	109,586
5	R01 GM29184-02 21100	BOLTON, PHILIP H CONFORMATION AND MOLECULAR DYNAMICS OF BACTERIOPHAGES	WESLEYAN UNIVERSITY	MIDDLETOWN	CONNECTICUT	82	03-83	1	BBCA 25,188	31,595
5	R01 GM29207-02 21200	ROSENBERG, JOHN M SEQUENCE SPECIFIC DNA PROTEIN INTERACTIONS	UNIVERSITY OF PITTSBURGH	PITTSBURGH	PENNSYLVANIA	82	03-83	1	BBCA 59,771	90,852
2	R01 GM29222-02 21100	MARZILLI, LUIGI G SYNTHESIS OF NUCLEIC ACID AND NUCLEOTIDE METAL COMPLEXES	EMORY UNIVERSITY	ATLANTA	GEORGIA	82	02-83	3	BBCA 66,142	99,213
5	R01 GM29234-04 22300	JACOBSON, KENNETH A LATERAL MOBILITY OF MOLECULES AT CELL SURFACE	UNIVERSITY OF NORTH CAROLINA CHAPEL HILL	CHAPEL HILL	NORTH CAROLINA	82	08-83	0	BBCA 84,521	114,526
7	R01 GM29240-01 21320	WILSON, G EDWIN, JR BINDING SITE STUDIES OF PROTEIN ELONGATION FACTORS	CLARKSON COLLEGE OF TECHNOLOGY	POTSDAM	NEW YORK	80	08-83	0	BBCA 36,480	52,858
5	R01 GM29274-02 21100	MARSHALL, ALAN G SOLUTION STRUCTURE OF RIBOSOMAL 5S RNA AND 5.8S RNA	OHIO STATE UNIVERSITY	COLUMBUS	OHIO	82	12-82	1	BBCA 59,710	80,471
5	R01 GM29318-02 22300	LAKOWICZ, JOSEPH R EFFECTS OF HYDROSTATIC PRESSURE ON CELL MEMBRANES	UNIVERSITY OF MARYLAND AT BALTIMORE	BALTIMORE	MARYLAND	82	01-83	1	BBCA 24,100	36,632

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1	R01 GM29336-01 12840	ISENBERG, IRVIN PULSE FLUOROMETRY	OREGON STATE UNIVERSITY	CORVALLIS	82 OREGON	01-83	2	BBCA 44,260	57,538
5	R01 GM29338-02 21100	SCHURR, J MICHAEL FLUCTUATIONS AND DYNAMICS OF DNA	UNIVERSITY OF WASHINGTON	SEATTLE	82 WASHINGTON	06-83	1	BBCA 55,010	69,633
5	R01 GM29374-02 21100	TURNER, DOUGLAS H FLUORESCENCE DETECTED CD STUDIES OF NUCLEIC ACIDS	UNIVERSITY OF ROCHESTER	ROCHESTER	82 NEW YORK	06-83	1	BBCA 18,466	29,574
1	R01 GM29375-01 22500	POLAVARAPU, PRASAD L VIBRATIONAL CIRCULAR DICHROISM STUDIES	VANDERBILT UNIVERSITY	NASHVILLE	82 TENNESSEE	01-83	2	BBCA 84,390	95,503
5	R01 GM29391-02 22600	SCHEINER, STEVE PROTON TRANSFERS IN PROTEINS	SOUTHERN ILLINOIS UNIVERSITY CARBONDALE	CARBONDALE	82 ILLINOIS	06-83	1	BBCA 32,782	46,972
5	R01 GM29458-02 22500	ROSE, GEORGE D HIERARCHIC SELF-ASSEMBLY IN GLOBULAR PROTEINS	PENNSYLVANIA STATE UNIV HERSHEY MED CTR	HERSHEY	82 PENNSYLVANIA	11-82	0	BBCA 23,720	30,554
1	R01 GM29533-01A1 22550	BAU, ROBERT ABSOLUTE CONFIGURATION STUDIES BY NEUTRON DIFFRACTION	UNIVERSITY OF SOUTHERN CALIFORNIA	LOS ANGELES	82 CALIFORNIA	06-83	2	BBCA 34,850	53,321
1	R01 GM29611-01 AI 11920	THOMAS, MICHAEL J OXYGEN AND OXY-RADICALS IN PHAGOCYTIC KILLING	WAKE FOREST UNIVERSITY	WINSTON-SALEM	82 NORTH CAROLINA	03-83	2	BBCA 42,839	54,424
5	R01 GM29690-02 21100	STELLWAGEN, NANCY C ELECTRIC BIREFRINGENCE OF DNA RESTRICTION FRAGMENTS	UNIVERSITY OF IOWA	IOWA CITY	82 IOWA	06-83	1	BBCA 45,865	63,294
5	R01 GM29707-02 22300	LIPSON, EDWARD D SYSTEM ANALYSIS OF PHYCOMYCES PHOTORESPONSES	SYRACUSE UNIVERSITY AT SYRACUSE	SYRACUSE	82 NEW YORK	06-83	2	BBCA 54,136	83,165
1	R01 GM29758-01 22300	BAYLEY, HAGAN P PROTEIN TOPOGRAPHY IN TRANSIENT MEMBRANCE STATES	COLUMBIA UNIVERSITY	NEW YORK	82 NEW YORK	01-83	2	BBCA 63,310	89,208
5	R01 GM29778-02 21100	LEVY, GEORGE C 13C AND OTHER NUCLEI NMR OF DNA AND DNA INTERACTIONS	SYRACUSE UNIVERSITY AT SYRACUSE	SYRACUSE	82 NEW YORK	06-83	0	BBCA 36,654	58,280

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9	R01 GM29787-11 21100	SARMA, RAMASWAMY H MAGNETIC RESONANCE STUDIES OF BIOLOGICAL INTERACTIONS	STATE UNIVERSITY OF NEW YORK AT ALBANY	ALBANY NEW YORK	82	08-83	4	BBCA	57,235	75,321
1	R01 GM29818-01 21600	BUNICK, GERALD J STRUCTURAL STUDIES OF NUCLEOSOMES	UNIVERSITY OF TENNESSEE KNOXVILLE	KNOXVILLE TENNESSEE	82	12-82	2	BBCA	60,765	88,109
5	R01 GM29828-02 21100	HARPST, JERRY A NUCLEOPROTEIN COMPLEXES FROM ADENOVIRUS	CASE WESTERN RESERVE UNIVERSITY	CLEVELAND OHIO	82	03-83	1	BBCA	53,395	78,872
1	R01 GM29984-01 22500	MICHL, JOSEF PHOTORESOLUTION AND RACEMIZATION KINETICS OF CONFORMERS	UNIVERSITY OF UTAH	SALT LAKE CITY UTAH	82	01-83	1	BBCA	30,490	42,636
1	R01 GM29985-01 22500	TRUE, NANCY S ROTATIONAL POTENTIAL FUNCTIONS OF AMIDES	UNIVERSITY OF CALIFORNIA DAVIS	DAVIS CALIFORNIA	82	01-83	2	BBCA	27,530	35,134
1	R01 GM30017-01 22500	FORSTER, LESLIE S PROTEIN FLUCTUATIONS AND FLUORESCENCE QUENCHING	UNIVERSITY OF ARIZONA	TUCSON ARIZONA	82	03-83	2	BBCA	22,070	31,560
1	R01 GM30114-01 22500	SEGAL, GERALD A CIRCULAR DICHROISM SPECTRA IN THE VACUUM ULTRAVIOLET	UNIVERSITY OF SOUTHERN CALIFORNIA	LOS ANGELES CALIFORNIA	82	03-83	2	BBCA	37,360	54,546
1	R01 GM30115-01 22300	LIS, LEONARD J HIGH SENSITIVITY MICROCALORIMETRY OF LIPID MIXTURES	ILLINOIS INSTITUTE OF TECHNOLOGY	CHICAGO ILLINOIS	82	08-83	2	BBCA	43,286	56,931
1	R01 GM30147-01 22500	KEIDERLING, TIMOTHY A VIBRATIONAL OPTICAL ACTIVITY: BIOCHEMICAL APPLICATIONS	UNIVERSITY OF ILLINOIS CHICAGO CIRCLE	CHICAGO ILLINOIS	82	01-83	2	BBCA	42,740	61,544
1	R01 GM30158-01 22300	SCHINDLER, MELVIN S BIODYNAMICS OF NUCLEAR MEMBRANE AND MATRIX	MICHIGAN STATE UNIVERSITY	EAST LANSING MICHIGAN	82	12-82	2	BBCA	60,250	79,172
1	R01 GM30174-01 22500	LANYI, JANOS TIME-RESOLVED INFRARED SPECTROSCOPY OF BACTERIORHODOPSIN	UNIVERSITY OF CALIFORNIA IRVINE	IRVINE CALIFORNIA	82	07-83	2	BBCA	82,728	102,371
9	R01 GM30267-04 CA 11930	WILSON, W DAVID INTERACTION OF ANTHRACYCLINE DRUGS WITH DNA	GEORGIA STATE UNIVERSITY	ATLANTA GEORGIA	82	12-82	2	BBCA	32,250	44,326

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1	R01 GM30282-01 22600	HASCHEMEYER, RUDY H BIOPHYSICAL FLUX METHODS: THEORY AND APPLICATIONS	CORNELL UNIVERSITY MEDICAL CENTER	NEW YORK / NEW YORK	82	01-83	2	25,050	BBCA 35,826
1	R01 GM30284-01 21100	HANLON, M SUE RAMAN SPECTRAL STUDIES OF DNA-AMINE COVALENT COMPLEXES	UNIVERSITY OF ILLINOIS MEDICAL CENTER	CHICAGO / ILLINOIS	82	07-83	1	35,195	BBCA 55,608
2	R01 GM30379-02 21600	CLARK, ROGER W EXTRA-CHROMOSOMAL BODIES-STRUCTURE AND REPLICATION	UNIVERSITY OF DENVER	DENVER / COLORADO	82	08-83	2	67,749	BBCA 94,836
1	R01 GM30393-01 22600	SALEMME, FRANCIS R STRUCTURAL COOPERATIVITY IN PROTEINS	UNIVERSITY OF ARIZONA	TUCSON / ARIZONA	82	04-83	2	41,360	BBCA 52,050
1	R01 GM30418-01 21320	UHLENBECK, OLKE C ANTICODON LOOP SUBSTITUTION IN TRNA	UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN	URBANA / ILLINOIS	82	04-83	2	54,134	BBCA 73,313
1	R01 GM30452-01 21100	ROSSKY, PETER J IONIC DISTRIBUTIONS IN POLYNUCLEOTIDE SOLUTIONS	UNIVERSITY OF TEXAS AUSTIN	AUSTIN / TEXAS	82	04-83	2	37,523	BBCA 50,656
1	R01 GM30498-01 21200	LOHMAN, TIMOTHY M DNA UNWINDING: THE ROLE OF E. COLI REP AND SSB PROTEINS	TEXAS AGRI AND MECH UNIV COLLEGE STATION	COLLEGE STATION / TEXAS	82	04-83	2	67,104	BBCA 79,106
5	R01 GM30518-02 22600	HONIG, BARRY H COMPUTER STUDIES OF PROTEIN STRUCTURE AND FUNCTION	COLUMBIA UNIVERSITY	NEW YORK / NEW YORK	82	08-83	1	52,580	BBCA 89,228
5	R01 GM30543-02 21100	DICKERSON, RICHARD E STRUCTURES AND INTERACTIONS OF DNA AND PROTEINS	UNIVERSITY OF CALIFORNIA LOS ANGELES	LOS ANGELES / CALIFORNIA	82	08-83	1	121,415	BBCA 167,242
3	R01 GM30543-02S1 21100	DICKERSON, RICHARD E STRUCTURES AND INTERACTIONS OF DNA AND PROTEINS	UNIVERSITY OF CALIFORNIA LOS ANGELES	LOS ANGELES / CALIFORNIA	82	08-83	1	20,225	BBCA 28,052
7	R01 GM30553-01 21200	JOHNSON, PAUL H RESTRICTION ENDONUCLEASE MECHANISMS AND DNA STRUCTURE	SRI INTERNATIONAL	MENLO PARK / CALIFORNIA	82	12-82	0	76,189	BBCA 149,187
1	R01 GM30560-01 22500	GROSS, ELIZABETH L CHEMICAL MODIFICATION OF PLASTOCYANIN	OHIO STATE UNIVERSITY	COLUMBUS / OHIO	82	04-83	2	56,580	BBCA 73,452

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1	R01 GM30561-01 22500	CRIPPEN, GORDON M CONFORMATIONAL ANALYSIS BY ENERGY EMBEDDING	TEXAS AGRI AND MECH UNIV	COLLEGE STATION COLLEGE STATION TEXAS	82	04-83	2	BBCA		41,250	53,213
1	R01 GM30562-01 21100	GERL JOHN A 31P AND 170 NMR STUDIES OF OLIGONUCLEOTIDE CONFORMATION	YALE UNIVERSITY	NEW HAVEN CONNECTICUT	82	08-83	2	BBCA		43,059	70,299
1	R01 GM30564-01 CA 22600	HAGLER, ARNOLD T A DYNAMIC SIMULATION OF LIGAND BINDING TO DHF-REDUCTASE	AGOURON INSTITUTE	LA JOLLA CALIFORNIA	82	04-83	2	BBCA		94,420	140,404
1	R01 GM30688-01 22400	KEIZER, JOEL E MECHANISTIC NONEQUILIBRIUM THERMODYNAMICS OF METABOLISM	UNIVERSITY OF CALIFORNIA	DAVIS DAVIS CALIFORNIA	82	06-83	2	BBCA		33,250	45,486
1	R01 GM30700-01 21320	WELLS, BARBARA D SPECTROSCOPIC STUDIES OF SOLUTION CONFORMATIONS OF TRNA	UNIVERSITY OF WISCONSIN	MILWAUKEE MILWAUKEE WISCONSIN	82	04-83	2	BBCA		76,391	94,611
1	R01 GM30781-01 21310	HEARST, JOHN E THE STRUCTURE OF RNA POLYMERASE TERNARY COMPLEXES	UNIVERSITY OF CALIFORNIA	BERKELEY BERKELEY CALIFORNIA	82	07-83	2	BBCA		8,150	11,565
1	R01 GM30789-01 21100	AUSTIN, ROBERT H TRIPLET ANISOTROPY DECAY STUDIES OF DNA MOTION	PRINCETON UNIVERSITY	PRINCETON NEW JERSEY	82	06-83	2	BBCA		44,662	68,766
7	R01 GM30793-01 22600	HAGLER, ARNOLD T WALTER IN BIOLOGICAL SYSTEM-MOLECULAR RECGONITON	AGOURON INSTITUTE	LA JOLLA CALIFORNIA	82	12-82	1	BBCA		39,050	58,692
1	R01 GM30900-01 22500	NOZAKI, YASUHIKO DETERMINATION OF THE CONCENTRATION OF BIOPOLYMERS	DUKE UNIVERSITY	DURHAM NORTH CAROLINA	82	06-83	1	BBCA		49,853	71,797
1	R01 GM30902-01 22550	KARLE, ISABELLA L X-RAY DIFFRACTION STUDIES OF OLIGOPEPTIDES	U.S. NAVAL RESEARCH LABORATORY	WASHINGTON DIST OF COL	82	07-83	2	BBCA		53,550	53,550
5	R01 GM31257-02 11920	TSAI, CHUN-CHE BINDING OF DRUGS TO NUCLEIC ACIDS	KENT STATE UNIVERSITY AT	KENT KENT OHIO	82	12-82	1	BBCA		42,228	56,520
9	R01 GM31616-04 21100	KIM, SUNG-HOU CRYSTALLINE COMPLEXES OF DNA WITH OTHER MOLECULES	UNIVERSITY OF CALIFORNIA	BERKELEY BERKELEY CALIFORNIA	82	06-83	4	BBCA		46,242	64,779

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1	R01 GM31674-01 / 21100	EDEN, DON / STRUCTURE AND ENVIRONMENT OF NUCLEIC ACIDS IN SOLUTION	SAN FRANCISCO STATE UNIVERSITY	SAN FRANCISCO / CALIFORNIA	82	06-83	2	BBCA 82,019	100,201
***	0	* CENTERS						0	0
***	219	NONCENTERS						12,619,925	17,784,773
***	219	TOTAL						12,619,925	17,784,773
5	R01 GM04725-26 / 22500	STURTEVANT, JULIAN M / PHYSICOCHEMICAL STUDIES OF BIOCHEMICAL REACTIONS	YALE UNIVERSITY	NEW HAVEN / CONNECTICUT	82	11-82	0	BBCB 61,030	93,817
5	R01 GM05811-22 / 11920	MORAWETZ, HERBERT / SYNTHETIC POLYMER STUDIES RELATED TO BIOLOGY	POLYTECHNIC INSTITUTE OF NEW YORK	NEW YORK / NEW YORK	82	06-83	0	BBCB 48,482	75,328
5	R01 GM08521-22 / 12840	GRANT, DAVID M / CARBON-13 MAGNETIC RESONANCE--METHODS AND THEORY	UNIVERSITY OF UTAH	SALT LAKE CITY / UTAH	82	05-83	0	BBCB 77,850	111,758
5	R01 GM10704-20 / 22550	ROSSMANN, MICHAEL G / STRUCTURAL STUDIES OF PROTEIN SUBUNITS	PURDUE UNIVERSITY WEST LAFAYETTE	WEST LAFAYETTE / INDIANA	82	05-83	0	BBCB 103,955	145,537
5	R01 GM10848-26 / 22500	GOLDSTEIN, JACOB H / NMR SPECTROSCOPY OF BIOLOGICALLY IMPORTANT SYSTEMS	EMORY UNIVERSITY	ATLANTA / GEORGIA	82	08-83	3	BBCB 71,814	106,721
2	R01 GM10928-20 / 22550	KRAUT, JOSEPH / CRYSTALLOGRAPHIC STUDY OF BIOLOGICAL MOLECULES	UNIVERSITY OF CALIFORNIA SAN DIEGO	LA JOLLA / CALIFORNIA	82	12-82	4	BBCB 109,250	142,270
5	R01 GM11071-20 / 22500	BRANDTS, JOHN F / FREE ENERGY OF FOLDING OF GLOBULAR PROTEINS	UNIVERSITY OF MASSACHUSETTS AMHERST	AMHERST / MASSACHUSETTS	82	06-83	0	BBCB 60,395	86,898

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5	R01 GM11180-19 21100	HEARST, JOHN E STRUCTURE-FUNCTION RELATIONSHIPS OF NUCLEIC ACIDS	UNIVERSITY OF CALIFORNIA	BERKELEY BERKELEY	82 CALIFORNIA	06-83	1	BBCB 127,566	181,016
5	R01 GM11762-17 22500	STARZAK, MICHAEL E THE EFFECTS OF SALTS ON INTERACTIONS IN AQUEOUS MEDIA	STATE UNIVERSITY NEW YORK	BINGHAMTON BINGHAMTON	81 NEW YORK	12-82	0	BBCB 35,507	51,733
5	R01 GM12446-18 22500	COHN, MILDRED NMR AND EPR STUDIES OF ENZYME-NUCLEOTIDE INTERACIONS	UNIVERSITY OF PENNSYLVANIA	PHILADELPHIA	81 PENNSYLVANIA	02-83	0	BBCB 106,888	168,695
5	R01 GM13215-17 22500	STELLWAGEN, EARLE C STRUCTURE AND FUNCTION STUDIES OF CYTOCHROME C	UNIVERSITY OF IOWA	IOWA CITY	82 IOWA	11-83	0	BBCB 36,590	50,494
5	R01 GM13366-18 22550	JENSEN, LYLE H CRYSTALLOGRAPHIC STUDY OF PROTEINS	UNIVERSITY OF WASHINGTON	SEATTLE	82 WASHINGTON	07-83	0	BBCB 79,230	105,862
5	R01 GM13498-17 11920	SPIRO, THOMAS G METAL CENTERS IN BIOLOGICAL SYSTEMS	PRINCETON UNIVERSITY	PRINCETON	82 NEW JERSEY	07-83	2	BBCB 67,710	105,924
5	R01 GM13914-18 22500	SCHUMAKER, VERNE N MACROMOLECULES OF CIRCULATORY AND GENETIC IMPORTANCE	UNIVERSITY OF CALIFORNIA	LOS ANGELES LOS ANGELES	82 CALIFORNIA	08-83	3	BBCB 86,430	119,878
2	R01 GM13925-17 22550	BANASZAK, LEONARD J STRUCTURAL STUDIES OF DEHYDROGENASES AND LIPOPROTEINS	WASHINGTON UNIVERSITY	SAINT LOUIS	82 MISSOURI	07-83	2	BBCB 129,330	181,762
5	R01 GM14078-16 22500	TAFT, ROBERT W HYDROGEN BONDING AND IONIC SOLVATION BY NMR AND ICR	UNIVERSITY OF CALIFORNIA	IRVINE IRVINE	82 CALIFORNIA	11-82	0	BBCB 46,370	60,745
2	R01 GM14312-28 22500	SCHERAGA, HAROLD A INTERNAL BONDING IN PROTEINS	CORNELL UNIVERSITY ITHACA	ITHACA	82 NEW YORK	12-82	4	BBCB 98,600	139,344
2	R01 GM14628-17 22300	THOMPSON, THOMAS E A STUDY OF PHOSPHOLIPID BILAYER MEMBRANES	UNIVERSITY OF VIRGINIA	CHARLOTTESVILLE CHARLOTTESVILLE	82 VIRGINIA	04-83	4	BBCB 76,260	107,877
5	R01 GM14971-17 22300	TIEN, H TI BILAYER LIPID MEMBRANES IN AQUEOUS MEDIA	MICHIGAN STATE UNIVERSITY	EAST LANSING	82 MICHIGAN	08-83	1	BBCB 90,780	126,175

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5	R01 GM15000-13 22550	RICHARDSON, DAVID C CRYSTALLOGRAPHIC ANALYSIS OF PROTEIN STRUCTURES	DUKE UNIVERSITY	DURHAM NORTH CAROLINA	82	05-83	1	BBCB 113,460	168,540
5	R01 GM15547-16 22500	PETICOLAS, WARNER L LASER RAMAN SCATTERING FROM BIOLOGICAL MACROMOLECULES	UNIVERSITY OF OREGON	EUGENE OREGON	82	08-83	0	BBCB 74,370	105,580
5	R01 GM16406-14 22500	DEBRUNNER, PETER G RESONANCE SPECTROSCOPY OF ENZYMES	UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN	URBANA ILLINOIS	82	12-82	1	BBCB 72,600	102,958
5	R01 GM16429-15 22550	LUDWIG, MARTHA L ENZYMES IN THE CRYSTALLINE STATE: STRUCTURE AND ACTIVITY	UNIVERSITY OF MICHIGAN AT ANN ARBOR	ANN ARBOR MICHIGAN	82	08-83	3	BBCB 112,440	177,655
5	R01 GM16552-14 22500	WAUGH, JOHN S HIGH RESOLUTION NMR IN SOLIDS	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	CAMBRIDGE MASSACHUSETTS	82	03-83	0	BBCB 108,340	158,175
5	R01 GM16925-14 22550	EISENBERG, DAVID S STRUCTURE AND ACTION OF MULTISUBUNIT ENZYMES	UNIVERSITY OF CALIFORNIA LOS ANGELES	LOS ANGELES CALIFORNIA	82	04-83	1	BBCB 135,820	176,839
2	R01 GM17452-11 22300	HUANG, CHING-HSIEN PHOSPHOLIPID VESICLES--MODEL FOR BIOLOGICAL MEMBRANES	UNIVERSITY OF VIRGINIA CHARLOTTESVILLE	CHARLOTTESVILLE VIRGINIA	82	04-83	4	BBCB 76,044	99,644
5	R01 GM17528-25 22500	BRESLOW, ESTHER M INTERACTIONS OF PROTEINS	CORNELL UNIVERSITY MEDICAL CENTER	NEW YORK NEW YORK	81	12-82	0	BBCB 79,096	122,293
5	R01 GM17575-11 22400	GORENSTEIN, DAVID G NMR PROBES OF ENZYMES AND NUCLEIC ACIDS	UNIVERSITY OF ILLINOIS CHICAGO CIRCLE	CHICAGO ILLINOIS	82	12-82	2	BBCB 49,212	75,288
5	R01 GM18051-11 22600	FRAUENFELDER, HANS HEME PROTEIN REACTIONS	UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN	URBANA ILLINOIS	82	05-83	2	BBCB 93,755	129,182
5	R01 GM18457-12 22300	CRAMER, WILLIAM A THE MECHANISM OF ACTION OF COLICIN	PURDUE UNIVERSITY WEST LAFAYETTE	WEST LAFAYETTE INDIANA	82	08-83	1	BBCB 61,866	86,012
5	R01 GM18865-11 22500	LOEHR, THOMAS M LASER RAMAN SPECTROSCOPY OF METALLOPROTEINS	OREGON GRADUATE CTR STUDY AND RESEARCH	BEAVERTON OREGON	82	04-83	1	BBCB 78,810	119,490

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2	R01 GM18894-12 AM 22500	YU, NAI-TENG LASER-EXCITED RAMAN SPECTROSCOPY OF BIOPOLYMERS	GEORGIA INSTITUTE OF TECHNOLOGY	ATLANTA GEORGIA	82	08-83	4	BBCB 66,622	97,035
5	R01 GM19267-11 22500	KUNTZ, IRWIN D, JR MACROMOLECULAR HYDRATION AND STRUCTURE	UNIVERSITY OF CALIFORNIA SAN FRANCISCO	SAN FRANCISCO CALIFORNIA	82	01-83	3	BBCB 41,110	53,575
5	R01 GM19455-11 22550	COTTON, F ALBERT STRUCTURE/FUNCTION STUDIES ON PROTEINS AND ENZYMES	TEXAS AGRI AND MECH UNIV	COLLEGE STATION COLLEGE STATION TEXAS	82	07-83	0	BBCB 66,840	86,224
5	R01 GM19991-09 22500	VAN HOOK, WILLIAM A GAS-SOLUTION CALORIMETRY-SOLVENT ISOTOPE EFFECTS	UNIVERSITY OF TENNESSEE KNOXVILLE	KNOXVILLE TENNESSEE	81	01-83	0	BBCB 37,952	53,900
2	R01 GM20064-08 22500	HOLTZER, ALFRED M PROPERTIES OF ALPHA-HELIX-FORMING SUBSTANCES	WASHINGTON UNIVERSITY	SAINT LOUIS MISSOURI	82	02-83	3	BBCB 41,670	64,589
5	R01 GM20066-10 22550	MATTHEWS, BRIAN W X-RAY STRUCTURAL STUDIES OF PROTEINS	UNIVERSITY OF OREGON	EUGENE OREGON	82	12-82	1	BBCB 69,290	93,738
2	R01 GM20102-10 12840	NGUYEN-HUU, XUONG COMPUTER CONTROLLED MULTIREFLECTION DIFFRACTOMETER	UNIVERSITY OF CALIFORNIA SAN DIEGO	LA JOLLA CALIFORNIA	82	07-83	0	BBCB 138,045	175,794
2	R01 GM20488-10 22500	MILLETT, FRANCIS S NMR STUDIES OF MEMBRANE BOUND PROTEINS	UNIVERSITY OF ARKANSAS AT FAYETTEVILLE	FAYETTEVILLE ARKANSAS	82	07-83	2	BBCB 61,118	82,801
5	R01 GM20530-10 22550	MATHEWS, F SCOTT STRUCTURAL STUDIES OF CYTOCHROMES B562 AND B2	WASHINGTON UNIVERSITY	SAINT LOUIS MISSOURI	82	07-83	1	BBCB 77,840	120,652
2	R01 GM20568-06 22550	VOET, DONALD H THE X-RAY STRUCTURE OF YEAST PYROPHOSPHATASE	UNIVERSITY OF PENNSYLVANIA	PHILADELPHIA PENNSYLVANIA	82	03-83	2	BBCB 65,330	106,495
5	R01 GM20682-09 22550	ARNOTT, STRUTHER GLYCOSAMINOGLYCAN AND PROTEOGLYCAN STRUCTURES	PURDUE UNIVERSITY WEST LAFAYETTE	WEST LAFAYETTE INDIANA	82	05-83	0	BBCB 72,337	100,872
2	R01 GM21047-09 22550	DORSET, DOUGLAS L ELECTRON DIFFRACTION OF MEMBRANE PHOSPHOLIPIDS	MEDICAL FOUNDATION OF BUFFALO	BUFFALO NEW YORK	82	05-83	2	BBCB 82,470	131,952

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2	R01 GM21111-09A1 22500	BALDESCHWIELER, JOHN D PAC STUDY OF PHOSPHOLIPID VESICLE TARGETING IN VIVO	CALIFORNIA INSTITUTE OF TECHNOLOGY	PASADENA CALIFORNIA	82	11-82	2	BBCB	84,560	125,149
2	R01 GM21128-08 22300	NAGLE, JOHN F THERMODYNAMIC MEASUREMENTS ON MEMBRANES	CARNEGIE-MELLON UNIVERSITY	PITTSBURGH PENNSYLVANIA	82	11-82	2	BBCB	50,150	68,567
5	R01 GM21148-06 11940	LICHTER, ROBERT L NATURAL-ABUNDANCE 15N NMR OF BIOORGANIC COMPOUNDS	HUNTER COLLEGE	NEW YORK NEW YORK	81	11-82	0	BBCB	52,188	83,254
5	R01 GM21156-09 22500	EATON, GARETH R INTERACTION OF SPIN LABELS WITH TRANSITION METALS	UNIVERSITY OF DENVER	DENVER COLORADO	82	06-83	0	BBCB	61,360	95,095
5	R01 GM21164-08 22550	MC CLURE, RICHARD J CRYSTAL STRUCTURAL STUDIES OF SERUM ALBUMIN	UNIVERSITY OF PITTSBURGH	PITTSBURGH PENNSYLVANIA	81	12-82	0	BBCB	49,906	75,857
5	R01 GM21189-09 22550	DE ROSIER, DAVID J STRUCTURAL STUDIES OF BIOLOGICAL COMPLEXES	BRANDEIS UNIVERSITY	WALTHAM MASSACHUSETTS	81	02-83	3	BBCB	87,539	141,813
5	R01 GM21189-10 22550	DE ROSIER, DAVID J STRUCTURAL STUDIES OF BIOLOGICAL COMPLEXES	BRANDEIS UNIVERSITY	WALTHAM MASSACHUSETTS	82	08-83	2	BBCB	105,490	189,882
2	R01 GM21225-07 22550	TULINSKY, ALEXANDER ASYMMETRY, STRUCTURE AND FUNCTION OF A-CHYMOTRYPSIN	MICHIGAN STATE UNIVERSITY	EAST LANSING MICHIGAN	82	11-82	2	BBCB	164,390	182,590
2	R01 GM21371-08 22550	QUIOCHO, FLORANTE A BINDING PROTEINS FOR ACTIVE TRANSPORT AND CHEMOTAXIS	RICE UNIVERSITY	HOUSTON TEXAS	82	11-82	4	BBCB	99,880	135,541
5	R01 GM21619-08 21100	LAUFFER, MAX A INTERACTIONS OF TOBACCO MOSAIC VIRUS AND ITS COMPONENTS	UNIVERSITY OF PITTSBURGH	PITTSBURGH PENNSYLVANIA	82	02-83	1	BBCB	68,647	103,303
5	R01 GM21652-08 22500	FERRY, JOHN D VISCOELASTIC PROPERTIES OF BIOLOGICAL MACROMOLECULES	UNIVERSITY OF WISCONSIN MADISON	MADISON WISCONSIN	82	12-82	1	BBCB	34,212	46,944
5	R01 GM21668-08 22500	HUTCHISON, CLYDE A, JR LOCAL STRUCTURE IN ENZYMES--A NEW APPROACH	UNIVERSITY OF CHICAGO	CHICAGO ILLINOIS	82	11-82	1	BBCB	81,748	123,556

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2	R01 GM21875-07 22300	BROCKERHOFF, HANS ROLE OF CHOLESTEROL IN BIOLOGICAL MEMBRANES	INSTITUTE FOR BASIC RES IN DEV DISABIL	NEW YORK / NEW YORK	82	08-83	4	BBCB 68,027	105,475
2	R01 GM21900-07 22500	MAKINEN, MARVIN W ENZYME COMPLEXES IN CRYSTALS-A NEW APPROACH	UNIVERSITY OF CHICAGO	CHICAGO / ILLINOIS	82	03-83	2	BBCB 111,240	143,297
5	R01 GM21919-08 21600	COLEMAN, JOSEPH E STRUCTURE AND FUNCTION OF DNA BINDING PROTEINS	YALE UNIVERSITY	NEW HAVEN / CONNECTICUT	82	05-83	0	BBCB 56,576	89,390
5	R01 GM21967-08 22550	MATTHEWS, BRIAN W STRUCTURE, FUNCTION AND STABILITY OF T4 PHAGE LYSOZYME	UNIVERSITY OF OREGON	EUGENE / OREGON	82	05-83	3	BBCB 85,720	115,133
5	R01 GM22175-07 22300	DAWIDOWICZ, ELIEZAR A PHYSICAL STUDY OF LIPID MOTION IN RED CELL MEMBRANES	HARVARD UNIVERSITY	BOSTON / MASSACHUSETTS	82	03-83	1	BBCB 65,794	128,825
2	R01 GM22240-07 22300	WISNIESKI, BERNADINE J PHYSICAL STRUCTURE OF ANIMAL CELL MEMBRANES	UNIVERSITY OF CALIFORNIA LOS ANGELES	LOS ANGELES / CALIFORNIA	82	11-82	4	BBCB 82,635	102,108
2	R01 GM22243-07A1 22500	COX, DAVID J SELF-ASSOCIATION REACTIONS OF MACROMOLECULES	KANSAS STATE UNIVERSITY	MANHATTAN / KANSAS	82	07-83	2	BBCB 43,987	55,980
5	R01 GM22247-06 22300	BERNS, DONALD S PHOTOSENSITIVE MODEL MEMBRANE STUDIES	NEW YORK STATE DEPARTMENT OF HEALTH	ALBANY / NEW YORK	80	10-82	0	BBCB 36,533	57,255
5	R01 GM22432-08 22300	CHAN, SUNNEY I STUDIES OF LIPID-LIPID AND LIPID-PROTEIN INTERACTIONS	CALIFORNIA INSTITUTE OF TECHNOLOGY	PASADENA / CALIFORNIA	82	08-83	2	BBCB 144,121	211,379
5	R01 GM22517-07 12840	PECORA, ROBERT DYNAMIC LIGHT SCATTERING FROM BIOLOGICAL SYSTEMS	STANFORD UNIVERSITY	STANFORD / CALIFORNIA	82	03-83	0	BBCB 41,283	68,864
2	R01 GM22623-07 21750	LU, PONZY SPECIFIC PROTEIN-DNA COMPLEXES: STRUCTURE AND DYNAMICS	UNIVERSITY OF PENNSYLVANIA	PHILADELPHIA / PENNSYLVANIA	82	02-83	4	BBCB 88,371	135,185
5	R01 GM22663-08 22550	REEKE, GEORGE N, JR COMPUTING METHODS FOR MACROMOLECULAR CYSTALLOGRAPHY	ROCKEFELLER UNIVERSITY	NEW YORK / NEW YORK	82	08-83	1	BBCB 43,600	67,198

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5	R01 GM22701-07 22500	MUNCK, ECKARD STUDIES OF O2 ACTIVATION BY MOSSBAUER SPECTROSCOPY	UNIVERSITY OF MINNESOTA OF MNPLS-ST PAUL	MINNEAPOLIS MINNESOTA	82	02-83	3	BBCB 48,450	65,208
5	R01 GM22728-07 22600	RICE, STUART A WATER: EXPERIMENTAL AND THEORETICAL STUDIES	UNIVERSITY OF CHICAGO	CHICAGO ILLINOIS	82	02-83	0	BBCB 63,050	89,869
5	R01 GM22923-07 22500	HYDE, JAMES S NITROXIDE RADICAL SPIN LABEL METHODS	MEDICAL COLLEGE OF WISCONSIN	MILWAUKEE WISCONSIN	82	02-83	1	BBCB 68,100	99,698
5	R01 GM23250-06 22300	HUEBNER, JAY S PHOTO-ELECTRIC MEMBRANE PROBES: PHYSICAL STUDIES	UNIVERSITY OF NORTH FLORIDA	JACKSONVILLE FLORIDA	82	06-83	0	BBCB 25,427	37,465
2	R01 GM23289-07 22500	GRIFFIN, ROBERT C SOLID STATE NMR STUDIES OF LIPID BILAYER STRUCTURE	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	CAMBRIDGE MASSACHUSETTS	82	06-83	2	BBCB 101,136	131,874
5	R01 GM23302-06 22500	HALVORSON, HERBERT R RELAXATION KINETICS OF SUBUNIT INTERACTIONS	HENRY FORD HOSPITAL	DETROIT MICHIGAN	81	01-83	0	BBCB 52,767	78,305
5	R01 GM23306-07 22550	HACKERT, MARVIN L STRUCTURE AND FUNCTION OF SUPRA-MOLECULAR ASSEMBLAGES	UNIVERSITY OF TEXAS AUSTIN	AUSTIN TEXAS	82	06-83	0	BBCB 33,980	45,348
2	R01 GM23316-06 22300	HERZFELD, JUDITH NMR STUDIES OF BIOLOGICAL MEMBRANES	HARVARD UNIVERSITY	BOSTON MASSACHUSETTS	82	03-83	3	BBCB 50,370	98,624
5	R01 GM23395-06 22500	BROWN, THEODORE L NUCLEAR QUADRUPOLE DOUBLE RESONANCE SPECTROSCOPY	UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN	URBANA ILLINOIS	82	12-83	0	BBCB 40,228	57,285
5	R01 GM23403-06 22500	GRIFFIN, ROBERT G SOLID STATE NMR STUDIES OF PEPTIDES AND PROTEINS	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	CAMBRIDGE MASSACHUSETTS	82	04-83	1	BBCB 76,210	112,700
5	R01 GM23567-05 12840	NAFIE, LAURENCE A VIBRATIONAL OPTICAL ACTIVITY IN PEPTIDE MOLECULES	SYRACUSE UNIVERSITY AT SYRACUSE	SYRACUSE NEW YORK	82	07-83	1	BBCB 49,355	75,524
5	R01 GM24068-05 22300	PETHICA, BRIAN A THE EFFECTS OF APPLIED ELECTRIC FIELDS ON SURFACE FILMS	CLARKSON COLLEGE OF TECHNOLOGY	POTSDAM NEW YORK	82	03-83	0	BBCB 3,750	5,756

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5	R01 GM24237-05 12930	BEER, MICHAEL ELECTRON MICROSCOPIC TECHNIQUES FOR MEMBRANE STRUCTURE	JOHNS HOPKINS UNIVERSITY	BALTIMORE	MARYLAND	82	12-82	1	BBCB		56,396	84,094
5	R01 GM24266-06 22500	OPELLA, STANLEY J NMR STUDIES OF BIOLOGICAL SUPRAMOLECULAR STRUCTURES	UNIVERSITY OF PENNSYLVANIA	PHILADELPHIA	PENNSYLVANIA	82	07-83	0	BBCB		70,526	116,368
5	R01 GM24267-06 22300	DAVIS, DONALD G THE CONFORMATION AND FUNCTION OF CYCLIC PEPTIDES	ADELPHI UNIVERSITY	GARDEN CITY	NEW YORK	82	06-83	0	BBCB		29,169	42,558
5	R01 GM24273-03 22300	MEHLHORN, ROLF J ASYMMETRY OF THE INNER MITOCHONDRIAL MEMBRANE	UNIVERSITY OF CALIFORNIA	BERKELEY BERKELEY	CALIFORNIA	81	12-82	0	BBCB		48,264	67,328
5	R01 GM24485-06 22550	STROUD, ROBERT M STRUCTURE AND FUNCTION OF PROTEINS AT MOLECULAR LEVEL	UNIVERSITY OF CALIFORNIA	SAN FRANCISCO SAN FRANCISCO	CALIFORNIA	82	03-83	1	BBCB		85,510	111,491
5	R01 GM24590-05 22300	HO, JOHN T PHOSPHOLID PHASE TRANSITIONS AND MEMBRANE FUSION	STATE UNIVERSITY OF NEW YORK AT BUFFALO	BUFFALO	NEW YORK	82	12-82	0	BBCB		40,612	54,169
5	R01 GM24792-05 22300	DAHLQUIST, FREDERICK W ENERGETICS AND DYNAMICS OF LIPID PROTEIN INTERACTIONS	UNIVERSITY OF OREGON	EUGENE	OREGON	82	12-82	3	BBCB		66,462	87,749
5	R01 GM24813-03 22500	FIAT, DANIEL OXYGEN-17 NMR STUDIES OF PEPTIDE CONFORMATION	UNIVERSITY OF ILLINOIS MEDICAL CENTER	CHICAGO	ILLINOIS	80	11-82	0	BBCB		49,190	79,196
3	R01 GM24813-03S1 22500	FIAT, DANIEL OXYGEN-17 NMR STUDIES OF PEPTIDE CONFORMATION	UNIVERSITY OF ILLINOIS MEDICAL CENTER	CHICAGO	ILLINOIS	81	11-82	0	BBCB		12,147	19,071
5	R01 GM24840-05 22300	OHKI, SHINPEI CELL FUSION IN MODEL AND BIOLOGICAL MEMBRANE SYSTEMS	STATE UNIVERSITY OF NEW YORK AT BUFFALO	BUFFALO	NEW YORK	82	03-83	1	BBCB		50,383	73,286
5	R01 GM24893-13 22500	SCHERAGA, HAROLD A MOTION AND PROXIMITY RELATIONS IN POLYPEPTIDES	CORNELL UNIVERSITY ITHACA	ITHACA	NEW YORK	82	03-83	3	BBCB		78,440	118,022
5	R01 GM24914-08 22600	BEVERIDGE, DAVID L SOLVENT EFFECTS ON BIOMOLECULAR STRUCTURE AND PROCESS	HUNTER COLLEGE	NEW YORK	NEW YORK	82	05-83	1	BBCB		93,650	149,453

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5	R01 GM24918-05 12840	DEUTSCH, MARTIN BIOLOGICAL CRYSTALLOGRAPHY, A PRECISION AREA DETECTOR	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	CAMBRIDGE MASSACHUSETTS	82	03-83	1	BBCB	78,386	122,531
5	R01 GM24951-08 22300	KEANA, JOHN F NEW LABELS FOR STUDYING MEMBRANE PROTEINS	UNIVERSITY OF OREGON	EUGENE OREGON	82	05-83	1	BBCB	71,331	95,865
5	R01 GM24971-05 22300	MC LAUGHLIN, STUART G DIVALENT CATIONS AND MEMBRANES	STATE UNIVERSITY NEW YORK STONY BROOK	STONY BROOK NEW YORK	82	08-83	1	BBCB	87,327	119,074
5	R01 GM25018-05 22500	JAMES, THOMAS L NMR RELAXATION STUDIES OF MOTION IN BIOPOLYMERS	UNIVERSITY OF CALIFORNIA SAN FRANCISCO	SAN FRANCISCO CALIFORNIA	82	03-83	1	BBCB	53,000	68,883
5	R01 GM25152-03 22300	HASCHEMEYER, RUDY H GAMMA-GLUTAMYL TRANSPEPTIDASE--MEMBRANE BOUND ENZYMES	CORNELL UNIVERSITY MEDICAL CENTER	NEW YORK NEW YORK	81	11-82	0	BBCB	48,962	74,838
2	R01 GM25158-04A1 22500	SPIRO, THOMAS G RAMAN STUDIES OF FLAVINS AND PYRIDINE COENZYMES	PRINCETON UNIVERSITY	PRINCETON NEW JERSEY	82	03-83	2	BBCB	65,550	98,542
5	R01 GM25181-05 22500	POWERS, JAMES C TRITIATION OF PROTEINS AND OTHER BIOMOLECULES	GEORGIA INSTITUTE OF TECHNOLOGY	ATLANTA GEORGIA	82	03-83	0	BBCB	62,400	96,720
5	R01 GM25219-03 22500	KRISHNA, N RAMA NMR STUDIES OF T AND B CELL DIFFERENTIATING PEPTIDES	UNIVERSITY OF ALABAMA IN BIRMINGHAM	BIRMINGHAM ALABAMA	81	12-82	0	BBCB	45,684	61,673
5	R01 GM25234-06 22550	SIGLER, PAUL B SPECIFIC MOLECULAR INTERACTIONS AT THE CELL SURFACE	UNIVERSITY OF CHICAGO	CHICAGO ILLINOIS	82	08-83	0	BBCB	45,390	76,709
5	R01 GM25236-05 21320	STUBBS, GERALD J STRUCTURE AND ASSEMBLY OF TOBACCO MOSAIC VIRUS	BRANDEIS UNIVERSITY	WALTHAM MASSACHUSETTS	82	03-83	1	BBCB	71,897	116,473
5	R01 GM25256-06 22300	MUELLER, PAUL H RECONSTITUTION AND ANALYSIS OF MEMBRANE TRANSPORT	UNIVERSITY OF PENNSYLVANIA	PHILADELPHIA PENNSYLVANIA	82	08-83	1	BBCB	61,202	100,008
5	R01 GM25261-04 21320	SCHMIDT, PAUL G NMR OF TRANSFER RNA	OKLAHOMA MEDICAL RESEARCH FOUNDATION	OKLAHOMA CITY OKLAHOMA	81	03-83	0	BBCB	26,913	37,005

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2	R01 GM25432-04 22550	AMZEL, LEON M 3-DIMENSIONAL STRUCTURE OF PROTON TRANSLOCATING ATPASES	JOHNS HOPKINS UNIVERSITY	BALTIMORE	MARYLAND	82	03-83	3	BBCB		87,150	116,975
2	R01 GM25435-04 22500	CHOTHIA, CYRUS THE THREE-DIMENSIONAL STRUCTURE OF PROTEIN MOLECULES	UNIVERSITY OF LONDON	LONDON	UNITED KINGDOM	82	11-82	2	BBCB		23,957	23,957
5	R01 GM25505-05 22500	GRIFFIN, ROBERT G NMR STUDIES OF LIPID ASSOCIATION	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	CAMBRIDGE	MASSACHUSETTS	82	06-83	2	BBCB		70,540	97,825
5	R01 GM25638-05 22250	WILLIAMS, ROBLEY C, JR ASSEMBLY AND DISASSEMBLY OF CYTOPLASMIC MICROTUBULES	VANDERBILT UNIVERSITY	NASHVILLE	TENNESSEE	82	06-83	3	BBCB		71,658	114,149
5	R01 GM25672-05 22550	STOUT, CHARLES D CRYSTAL STRUCTURES OF AZOTOBACTER PROTEINS	UNIVERSITY OF PITTSBURGH	PITTSBURGH	PENNSYLVANIA	82	07-83	3	BBCB		70,860	106,667
2	R01 GM25703-04 22500	SCHMIDT, PAUL G ACID PROTEASE STRUCTURE, DYNAMICS AND MECHANISM	OKLAHOMA MEDICAL RESEARCH FOUNDATION	OKLAHOMA CITY	OKLAHOMA	82	11-82	2	BBCB		44,380	60,908
2	R01 GM25862-04 22300	FREED, JACK H ELECTRON-SPIN RELAXATION IN MODEL MEMBRANES	CORNELL UNIVERSITY ITHACA	ITHACA	NEW YORK	82	11-82	3	BBCB		94,600	138,293
2	R01 GM25937-04 22300	DUNKER, A KEITH LASER RAMAN STUDIES OF LIPID/PROTEIN INTERACTIONS	WASHINGTON STATE UNIVERSITY	PULLMAN	WASHINGTON	82	03-83	3	BBCB		46,526	65,213
2	R01 GM25975-04 22500	GERIG, JOHN T STRUCTURAL STUDIES OF PROTEINS BY FLUORINE NMR	UNIVERSITY OF CALIFORNIA SANTA BARBARA	SANTA BARBARA	CALIFORNIA	82	08-83	2	BBCB		76,513	98,425
5	R01 GM26071-04 22500	KOPPLE, KENNETH D INFLUENCE OF SOLVATION ON PEPTIDE CONFORMATION	ILLINOIS INSTITUTE OF TECHNOLOGY	CHICAGO	ILLINOIS	82	04-83	1	BBCB		98,940	156,625
5	R01 GM26203-03 22550	CARTER, CHARLES W, JR TRP-TRNA LIGASE AND SUBSTRATE COMPLEXES: X-RAY STUDY	UNIVERSITY OF NORTH CAROLINA CHAPEL HILL	CHAPEL HILL	NORTH CAROLINA	81	03-83	0	BBCB		37,983	54,696
2	R01 GM26346-04 22550	WHITE, STEPHEN H STRUCTURAL STUDIES OF BILAYER SOLUTIONS	UNIVERSITY OF CALIFORNIA IRVINE	IRVINE	CALIFORNIA	82	03-83	2	BBCB		207,920	237,694

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2	R01 GM26357-04 22550	DEROSIER, DAVID J STRUCTURAL STUDIES OF CELLULAR ASSEMBLIES OF ACTIN	BRANDEIS UNIVERSITY	WALTHAM MASSACHUSETTS	82	03-83	2	BBCB 34,320	54,358
2	R01 GM26360-04 22550	TULINSKY, ALEXANDER CRYSTAL-SOLUTION STUDY OF CATALYTICALLY ACTIVE ALDOLASE	MICHIGAN STATE UNIVERSITY	EAST LANSING MICHIGAN	82	04-83	2	BBCB 109,000	144,998
5	R01 GM26369-05 22300	PAPAHADJOPOULOS, DEMETRIOS PHOSPHOLIPID-PROTEIN INTERACTIONS AND MEMBRANE FUNCTION	UNIVERSITY OF CALIFORNIA	SAN FRANCISCO SAN FRANCISCO CALIFORNIA	82	08-83	1	BBCB 64,019	81,752
5	R01 GM26472-03 11920	KAREL, MARCUS FREE RADICAL REACTIONS OF LIPOPEROXIDES AND PROTEINS	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	CAMBRIDGE MASSACHUSETTS	82	11-82	0	BBCB 41,838	67,296
2	R01 GM26536-03A1 22300	HUDSON, BRUCE S FLUORESCENCE STUDIES OF MOTION IN MEMBRANES	UNIVERSITY OF OREGON	EUGENE OREGON	82	05-83	2	BBCB 42,140	55,436
5	R01 GM26680-03 22550	HSU, I-NAN CRYSTALLOGRAPHIC STUDIES OF PENICILLOPEPSIN	CALIFORNIA STATE UNIVERSITY NORTHRIDGE	NORTHRIDGE CALIFORNIA	82	06-83	0	BBCB 32,960	45,814
2	R01 GM26723-04 12930	SMITH, PHILLIP R BIOLOGICAL STRUCTURAL STUDIES USING IMAGE PROCESSING	NEW YORK UNIVERSITY	NEW YORK NEW YORK	82	06-83	4	BBCB 91,899	136,894
5	R01 GM26767-03 22550	FENNA, ROGER E STRUCTURAL STUDIES OF LACTOSE SYNTHETASE	UNIVERSITY OF MIAMI	MIAMI FLORIDA	82	11-82	0	BBCB 26,250	41,819
5	R01 GM26864-04 22600	MC QUARRIE, DONALD A FORCE BALANCE IN POLYELECTROLYTE SYSTEMS	UNIVERSITY OF CALIFORNIA	DAVIS DAVIS CALIFORNIA	82	11-82	1	BBCB 34,650	45,392
2	R01 GM26874-04 22300	HO, CHIEN NMR AND BIOCHEMICAL STUDIES OF BIOLOGICAL MEMBRANES	CARNEGIE-MELLON UNIVERSITY	PITTSBURGH PENNSYLVANIA	82	12-82	4	BBCB 125,050	178,975
5	R01 GM26894-04 22300	BILTONEN, RODNEY L A MODEL CALCIUM TRANSPORT SYSTEM	UNIVERSITY OF VIRGINIA	CHARLOTTESVILLE CHARLOTTESVILLE VIRGINIA	82	06-83	1	BBCB 71,696	103,284
5	R01 GM26895-04 22550	JURNAK, FRANCES A CRYSTALLOGRAPHIC STUDIES OF PROTEIN ELONGATION FACTORS	UNIVERSITY OF CALIFORNIA	RIVERSIDE RIVERSIDE CALIFORNIA	82	07-83	0	BBCB 26,982	36,187

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5	R01 GM26897-03 22300	SZABO, GABOR STRUCTURE-FUNCTION RELATIONSHIPS FOR GATABLE CHANNELS	UNIVERSITY OF TEXAS MED BR GALVESTON	GALVESTON TEXAS	81	07-83	0	BBCB	35,020	46,587
5	R01 GM26898-04 22300	URRY, DAN W CHANNEL MECHANISMS FOR PERMEATION OF BIOMEMBRANES	UNIVERSITY OF ALABAMA IN BIRMINGHAM	BIRMINGHAM ALABAMA	82	06-83	1	BBCB	80,619	105,473
5	R01 GM26905-03 22550	RUBIN, BYRON H THREE-DIMENSIONAL STRUCTURE OF CHLOROPEROXIDASE	EMORY UNIVERSITY	ATLANTA GEORGIA	81	07-83	0	BBCB	28,808	39,298
5	R01 GM26976-03 22300	RUDY, BERNARDO ANALYSIS OF VOLTAGE-DEPENDENT CHANNELS IN VITRO	NEW YORK UNIVERSITY	NEW YORK NEW YORK	81	03-83	0	BBCB	47,863	68,923
5	R01 GM26980-03 22300	WALDBILLIG, RONALD C MEMBRANE SOLUBILITY OF ANESTHETICS IN BILAYER NERVE	UNIVERSITY OF TEXAS MED BR GALVESTON	GALVESTON TEXAS	82	11-82	0	BBCB	61,800	83,080
5	R01 GM26981-04 22500	HUDSON, BRUCE S RESONANCE ENHANCED SPECTROSCOPY	UNIVERSITY OF OREGON	EUGENE OREGON	82	12-82	0	BBCB	41,455	55,046
5	R01 GM27013-03 22400	AULL, JOHN L ISOLATION AND CHARACTERIZATION OF DEUTERATED ENZYMES	AUBURN UNIVERSITY AT AUBURN	AUBURN ALABAMA	81	02-83	0	BBCB	44,304	62,492
2	R01 GM27061-04 12930	CHIU, WAH ELECTRON MICROSCOPY ANALYSIS OF DNA-BINDING PROTEIN	UNIVERSITY OF ARIZONA	TUCSON ARIZONA	82	06-83	2	BBCB	77,220	104,216
5	R01 GM27076-03 22550	SWEET, ROBERT M X-RAY DIFFRACTION STUDIES OF PHYCOBILISOME ASSEMBLY	UNIVERSITY OF CALIFORNIA LOS ANGELES	LOS ANGELES CALIFORNIA	82	12-82	0	BBCB	49,270	64,544
5	R01 GM27100-03 22550	ARGOS, PATRICK STRUCTURAL STUDIES OF THE PHOSPHORIBOSYLTRANSFERASES	PURDUE UNIVERSITY WEST LAFAYETTE	WEST LAFAYETTE INDIANA	82	05-83	0	BBCB	36,860	50,636
5	R01 GM27123-03 22550	PETSKO, GREGORY A CRYSTALLOGRAPHIC STUDIES OF PROTEIN DYNAMICS	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	CAMBRIDGE MASSACHUSETTS	82	11-82	0	BBCB	22,330	35,650
5	R01 GM27127-03 22300	WESTERMAN, PHILIP W DMR STUDIES OF PROTEIN-PHOSPHOLIPID BILAYER MEMBRANES	NORTHEASTERN OHIO UNIVERSITIES COLL MED	ROOTSTOWN OHIO	82	12-82	0	BBCB	46,600	58,012

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5	R01 GM27140-02 22300	KOHLER, SUSAN J 31P AND 2H NMR INVESTIGATION OF PHOSPHOLIPID BILAYERS	MOUNT HOLYOKE COLLEGE	SOUTH HADLEY MASSACHUSETTS	81	11-82	0	BBCB	24,186	35,335
5	R01 GM27144-03 22550	COOK, WILLIAM J THE MOLECULAR STRUCTURE OF UBIQUITIN	UNIVERSITY OF ALABAMA IN BIRMINGHAM	BIRMINGHAM ALABAMA	82	03-83	0	BBCB	12,870	17,477
5	R01 GM27200-03 22450	CRONIN, JOHN R NMR OF CHEMICALLY MODIFIED HEART MUSCLE CYTOCHROME C	ARIZONA STATE UNIVERSITY	TEMPE ARIZONA	82	06-83	0	BBCB	22,925	34,158
5	R01 GM27243-03 22300	BROWN, ELLEN B RAMAN SPECTROSCOPIC STUDIES OF MEMBRANE COMPONENTS	WAYNE STATE UNIVERSITY	DETROIT MICHIGAN	82	08-83	0	BBCB	13,370	18,176
5	R01 GM27274-03 22550	PEARSON, ROBERT H SINGLE CRYSTAL MOLECULAR STRUCTURES OF LECITHIN	ROSWELL PARK MEMORIAL INSTITUTE	BUFFALO NEW YORK	82	12-82	0	BBCB	35,900	53,591
5	R01 GM27278-03 22550	MC INTOSH, THOMAS J LIPID BILAYER STRUCTURE: EFFECT OF SMALL MOLECULES	DUKE UNIVERSITY	DURHAM NORTH CAROLINA	82	06-83	0	BBCB	41,930	62,895
5	R01 GM27308-04 22450	CHANCE, BRITTON MECHANISM OF ELECTRON TRANSFER REACTIONS IN MITOCHONDRIA	UNIVERSITY OF PENNSYLVANIA	PHILADELPHIA PENNSYLVANIA	82	04-83	1	BBCB	96,074	154,343
5	R01 GM27309-04 22450	DUTTON, PETER L ELECTRON AND PROTON TRANSLOCATION IN ENERGY CONVERSION	UNIVERSITY OF PENNSYLVANIA	PHILADELPHIA PENNSYLVANIA	82	04-83	1	BBCB	93,085	153,590
5	R01 GM27367-03 22300	COHEN, FREDRIC S FUSION OF PHOSPHOLIPID VESICLES WITH PLANAR MEMBRANES	RUSH UNIVERSITY	CHICAGO ILLINOIS	82	03-83	0	BBCB	37,553	62,186
5	R01 GM27645-04 22550	MC PHERSON, ALEXANDER X-RAY DIFFRACTION ANALYSIS OF DNA BINDING PROTEINS	UNIVERSITY OF CALIFORNIA RIVERSIDE	RIVERSIDE CALIFORNIA	82	08-83	3	BBCB	74,810	101,811
2	R01 GM27665-04 12840	HYDE, JAMES S DEVELOPMENT OF BIOMEDICAL ESR INSTRUMENTATION	MEDICAL COLLEGE OF WISCONSIN	MILWAUKEE WISCONSIN	82	06-83	2	BBCB	204,911	269,735
5	R01 GM27682-03 22550	ARGOS, PATRICK COMPARISON AND PREDICTION OF PROTEIN STRUCTURE	PURDUE UNIVERSITY WEST LAFAYETTE	WEST LAFAYETTE INDIANA	82	07-83	0	BBCB	27,254	38,156

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5	R01 GM27690-03 22300	STRAUSS, HERBERT L VIBRATIONAL STUDIES OF LIPID STRUCTURE AND DYNAMICS	UNIVERSITY OF CALIFORNIA	BERKELEY BERKELEY	82 CALIFORNIA	03-83	0	BBCB		56,283	73,731
5	R01 GM27744-03 22300	BROWN, ELLEN B POLAR HEAD GROUP INTERACTIONS AND LIPID PROPERTIES	WAYNE STATE UNIVERSITY	DETROIT	82 MICHIGAN	04-83	0	BBCB		22,800	32,423
5	R01 GM27756-03 22300	EISENBERG, MOISES VOLTAGE GATED PORES IN MEMBRANES: ALAMETHICIN	STATE UNIVERSITY NEW YORK	STONY BROOK STONY BROOK	82 NEW YORK	03-83	0	BBCB		32,411	48,272
5	R01 GM27814-02 22400	DE TAR, DELOS F QUANTITATIVE PREDICTION OF PROTEIN INTERACTIONS	FLORIDA STATE UNIVERSITY	TALLAHASSEE	82 FLORIDA	01-83	0	BBCB		32,952	47,304
2	R01 GM27838-04 22550	MC PHERSON, ALEXANDER X-RAY CRYSTALLOGRAPHIC ANALYSES OF PROTEIN STRUCTURES	UNIVERSITY OF CALIFORNIA	RIVERSIDE RIVERSIDE	82 CALIFORNIA	06-83	4	BBCB		58,450	79,675
5	R01 GM27906-03 22300	THOMAS, DAVID D BIOPHYSICAL STUDIES OF MEMBRANE MOLECULAR DYNAMICS	UNIVERSITY OF MINNESOTA OF MNPLS-ST PAUL	MINNEAPOLIS	82 MINNESOTA	03-83	0	BBCB		40,931	54,298
5	R01 GM27907-03 22550	RUBIN, BYRON H STRUCTURE STUDIES OF PROTEINS GLYCOPROTEINS AND ENZYMES	EMORY UNIVERSITY	ATLANTA	82 GEORGIA	04-83	0	BBCB		30,280	45,420
5	R01 GM27914-03 22300	COSTELLO, MARTIN J, III COMBINED X-RAY/EM ANALYSIS OF INTRAMEMBRANE PARTICLES	DUKE UNIVERSITY	DURHAM	82 NORTH CAROLINA	06-83	0	BBCB		42,234	62,824
5	R01 GM27927-03 22400	BACHOVCHIN, WILLIAM W NMR STUDIES OF ENZYME MECHANISMS	TUFTS UNIVERSITY	BOSTON	82 MASSACHUSETTS	07-83	0	BBCB		22,798	35,288
5	R01 GM27945-04 22600	FIXMAN, MARSHALL THEORETICAL CHEMISTRY AND POLYMERS	COLORADO STATE UNIVERSITY	FORT COLLINS	82 COLORADO	06-83	3	BBCB		89,340	124,004
5	R01 GM27951-04 22600	GIBBS, JULIAN H STATISTICAL MECHANICS OF BIOLOGICAL MACROMOLECULES	AMHERST COLLEGE	AMHERST	82 MASSACHUSETTS	08-83	0	BBCB		44,300	66,704
5	R01 GM28087-03 13200	WANG, HOWARD H FUNCTIONALLY SIGNIFICANT BINDING OF LOCAL ANESTHETICS	UNIVERSITY OF CALIFORNIA	SANTA CRUZ SANTA CRUZ	82 CALIFORNIA	08-83	0	BBCB		37,419	54,295

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5	R01 GM28117-03 22300	PAPAHADJOPOULOS, DEMETRIOS MECHANISM OF MEMBRANE FUSION	UNIVERSITY OF CALIFORNIA	SAN FRANCISCO SAN FRANCISCO	82 CALIFORNIA	07-83	1	BBCB	50,064	63,932
5	R01 GM28120-03 22300	HUI, SEK-WEN EFFECTS OF BILAYER DEFECTS ON MEMBRANE ACTIVITY	ROSWELL PARK MEMORIAL INSTITUTE	BUFFALO	82 NEW YORK	06-83	0	BBCB	51,179	75,621
5	R01 GM28149-02 22300	NEURINGER, LEO J NMR STUDIES OF NEURAL MEMBRANES AND MODEL SYSTEMS	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	CAMBRIDGE	82 MASSACHUSETTS	03-83	1	BBCB	69,021	96,094
5	R01 GM28338-03 22300	MOUNTCASTLE, DONALD B TRANSMEMBRANE SIGNALING FOLLOWING RECEPTOR BINDING	UNIVERSITY OF MAINE AT ORONO	ORONO	82 MAINE	06-83	0	BBCB	39,225	57,465
5	R01 GM28358-04 22500	ORME-JOHNSON, WILLIAM, III STRUCTURES & MECHANISMS OF ELECTRON TRANSFER ENZYMES	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	CAMBRIDGE	82 MASSACHUSETTS	06-83	1	BBCB	81,690	121,443
5	R01 GM28404-06 22300	MACDONALD, ROBERT C MEMBRANE FUSION	NORTHWESTERN UNIVERSITY	EVANSTON	82 ILLINOIS	02-83	0	BBCB	29,893	41,252
1	R01 GM28438-01 22300	NEUMAN, RONALD D LASER LIGHT-SCATTERING STUDIES OF LIPID MONOLAYERS	UNIVERSITY OF MINNESOTA OF MNPLS-ST PAUL	MINNEAPOLIS	81 MINNESOTA	01-83	0	BBCB	8,855	12,454
5	R01 GM28532-02 22300	LAUTERBUR, PAUL C NMR AND ESR STUDIES OF OUTER MEMBRANE PROTEINS	STATE UNIVERSITY NEW YORK STONY BROOK	STONY BROOK	82 NEW YORK	01-83	1	BBCB	33,385	49,075
5	R01 GM28534-02 22500	RHA, CHOKYUN PROTEIN-PROTEIN INTERACTIONS: RHEOLOGICAL ASSESSMENT	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	CAMBRIDGE	82 MASSACHUSETTS	01-83	1	BBCB	41,560	60,393
5	R01 GM28652-02 22550	MEEHAN, EDWARD J, JR MOLECULAR STRUCTURE OF PISUM SATIVUM LECTIN	UNIVERSITY OF ALABAMA IN HUNTSVILLE	HUNTSVILLE	82 ALABAMA	11-82	1	BBCB	26,900	35,983
5	R01 GM28668-02 22550	UNWIN, NIGEL DIFFRACTION STUDIES OF GAP JUNCTIONS AND RIBOSOMES	STANFORD UNIVERSITY	STANFORD	82 CALIFORNIA	11-82	1	BBCB	21,020	33,212
5	R01 GM28750-02 12930	FREY, TERRENCE G HIGH RESOLUTION ELECTRON MICROSCOPY OF MACROMOLECULES	UNIVERSITY OF PENNSYLVANIA	PHILADELPHIA	82 PENNSYLVANIA	03-83	1	BBCB	50,546	82,101

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5	R01 GM28757-03 22300	ARNETT, EDWARD M CHIRAL MONOLAYERS	DUKE UNIVERSITY	DURHAM	82 NORTH CAROLINA	06-83	0	BBCB 58,957	87,836
5	R01 GM28795-08 22300	TSONG, TIAN Y DYNAMICS OF SYNTHETIC AND BIOLOGICAL MEMBRANE	JOHNS HOPKINS UNIVERSITY	BALTIMORE	82 MARYLAND	04-83	3	BBCB 72,387	107,081
5	R01 GM28826-08 11930	GIBBONS, WILLIAM A STRUCTURE, SPECTROSCOPY, AND FUNCTION OF NEUROPEPTIDES	UNIVERSITY OF WISCONSIN MADISON	MADISON	82 WISCONSIN	06-83	2	BBCB 73,094	102,979
5	R01 GM28848-02 22550	JEFFREY, GEORGE A CRYSTAL STRUCTURE PHASE DETERMINATION	UNIVERSITY OF PITTSBURGH	PITTSBURGH	82 PENNSYLVANIA	03-83	1	BBCB 28,880	43,898
5	R01 GM29044-02 22550	MOFFAT, JOHN K PROTEINS OF PHYSIOLOGICAL INTEREST: STRUCTURE-FUNCTION	CORNELL UNIVERSITY ITHACA	ITHACA	82 NEW YORK	04-83	3	BBCB 93,000	137,293
1	R01 GM29076-01A1 22550	KIM, JUNG-JA P STRUCTURE AND MECHANISM OF A FLAVOPROTEIN DEHYDROGENASE	MEDICAL COLLEGE OF WISCONSIN	MILWAUKEE	82 WISCONSIN	02-83	2	BBCB 59,120	75,294
5	R01 GM29243-02 22550	ENGELMAN, DONALD M NEUTRON STUDIES OF BACTERIORHODOPSIN STRUCTURE	YALE UNIVERSITY	NEW HAVEN	82 CONNECTICUT	12-82	1	BBCB 58,770	92,857
5	R01 GM29287-02 22550	KIM, SUNG-HOU STRUCTURES OF ECORI RESTRICTION-MODIFICATION ENZYMES	UNIVERSITY OF CALIFORNIA BERKELEY	BERKELEY	82 CALIFORNIA	07-83	3	BBCB 59,860	83,265
1	R01 GM29378-01 22500	KEGELES, GERSON RAPID KINETICS OF AGGREGATING SYSTEMS	UNIVERSITY OF CONNECTICUT STORRS	STORRS	81 CONNECTICUT	12-82	0	BBCB 37,095	55,240
5	R01 GM29427-02 22550	COOK, WILLIAM J THE MOLECULAR STRUCTURE OF CALMODULIN	UNIVERSITY OF ALABAMA IN BIRMINGHAM	BIRMINGHAM	82 ALABAMA	06-83	1	BBCB 46,260	62,821
5	R01 GM29428-02 22500	BRYANT, ROBERT G BIOPHYSICAL DYNAMICS: MAGNETIC RESONANCE APPROACHES	UNIVERSITY OF MINNESOTA OF MNPLS-ST PAUL	MINNEAPOLIS	82 MINNESOTA	06-83	3	BBCB 76,480	105,371
5	R01 GM29520-02 13200	WYRWICZ, ALICE M MAGNETIC RESONANCE INVESTIGATION OF ANESTHESIA	UNIVERSITY OF ILLINOIS CHICAGO CIRCLE	CHICAGO	82 ILLINOIS	08-83	1	BBCB 37,479	56,593

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1	R01 GM29548-01 22550	HENDRICKSON, WAYNE A ANOMALOUS-SCATTERING STUDIES OF PROTEIN STRUCTURE	U.S. NAVAL RESEARCH LABORATORY	WASHINGTON DIST OF COL	82	01-83	2	BBCB	82,130	82,130
5	R01 GM29616-02 22550	KOSSIAKOFF, ANTHONY A NEUTRON STUDIES OF PROTEIN DYNAMICS AND SOLVATION	ASSOCIATED UNIV-BROOKHAVEN NATL LAB	UPTON NEW YORK	82	06-83	1	BBCB	68,340	109,344
1	R01 GM29643-01 22300	LOW, PHILIP S DRUG DISTRIBUTION PATTERNS IN BIOLOGICAL MEMBRANES	PURDUE UNIVERSITY WEST LAFAYETTE	WEST LAFAYETTE INDIANA	82	08-83	2	BBCB	29,809	41,733
5	R01 GM29750-02 22600	WILSON, KENT R ION TRANSPORT THROUGH MEMBRANE CHANNELS	UNIVERSITY OF CALIFORNIA SAN DIEGO	LA JOLLA CALIFORNIA	82	06-83	1	BBCB	44,460	59,176
1	R01 GM29754-01 22500	OPELLA, STANLEY J SOLID STATE NMR OF PEPTIDES	UNIVERSITY OF PENNSYLVANIA	PHILADELPHIA PENNSYLVANIA	82	12-82	2	BBCB	49,740	63,871
5	R01 GM29791-09 22550	TSERNOGLOU, DEMETRIUS X-RAY DIFFRACTION ANALYSIS OF THROMBIN AND NEUROTOXIN	WAYNE STATE UNIVERSITY	DETROIT MICHIGAN	82	01-83	1	BBCB	54,480	74,064
5	R01 GM29829-02 22550	MAKOWSKI, LEE STRUCTURAL STUDIES OF VIRUSES AND MEMBRANES	COLUMBIA UNIVERSITY	NEW YORK NEW YORK	82	03-83	1	BBCB	63,710	103,398
5	R01 GM29834-02 22250	WILLIAMS, ROBLEY C, JR BIOCHEMICAL INVESTIGATION OF NEUROFILAMENTS	VANDERBILT UNIVERSITY	NASHVILLE TENNESSEE	82	03-83	1	BBCB	33,431	50,561
1	R01 GM29864-01 AM 22300	MENDELSOHN, RICHARD LIPID CONTROL OF MEMBRANE PROTEIN ORGANIZATION	RUTGERS THE STATE UNIV NEW BRUNSWICK	NEW BRUNSWICK NEW JERSEY	82	01-83	2	BBCB	61,545	80,421
9	R01 GM30048-04 CA 22550	ROBERTUS, JON D STRUCTURAL ANALYSIS OF THE ANTI-TUMOR PROTEIN RICIN	UNIVERSITY OF TEXAS AUSTIN	AUSTIN TEXAS	82	02-83	2	BBCB	51,520	67,802
1	R01 GM30105-01 AI 22550	HACKERT, MARVIN L STRUCTURE AND FUNCTION OF HISTIDINE DECARBOXYLASE	UNIVERSITY OF TEXAS AUSTIN	AUSTIN TEXAS	82	01-83	2	BBCB	52,300	67,105
1	R01 GM30165-01A1 22550	TEETER, MARTHA M STRUCTURE/FUNCTION IN HEMOLYTIC TOXINS	BOSTON UNIVERSITY	BOSTON MASSACHUSETTS	82	06-83	2	BBCB	51,780	86,716

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1	R13 GM30505-01 GM 22550	HENDRICKSON, WAYNE A GORDON CONFERENCE ON DIFFRACTION METHODS IN BIOLOGY	GORDON RESEARCH CONFERENCES	KINGSTON	RHODE ISLAND	82	04-83	0	BBCB		2,000	2,000
1	R13 GM30508-01 22500	HUDSON, BRUCE S THE 1982 BIOPOLYMERS GORDON CONFERENCE	GORDON RESEARCH CONFERENCES	KINGSTON	RHODE ISLAND	82	05-83	0	BBCB		2,000	2,000
1	R01 GM30551-01 22550	SUDDATH, FRED L, JR HIGH RESOLUTION STRUCTURE OF PISUM SATIVUM LECTIN	UNIVERSITY OF ALABAMA IN BIRMINGHAM	BIRMINGHAM	ALABAMA	82	04-83	2	BBCB		29,150	39,586
1	R01 GM30556-01 22500	BROWN, LARRY R STRUCTURE & DYNAMICS OF PROTEIN-LIPID COMPLEXES BY NMR	MICHIGAN MOLECULAR INSTITUTE	MIDLAND	MICHIGAN	82	04-83	2	BBCB		49,818	86,202
1	R01 GM30580-01 22500	LEVY, RONALD M NMR RELAXATION AND DYNAMICS OF PEPTIDES AND PROTEINS	RUTGERS THE STATE UNIV NEW BRUNSWICK	NEW BRUNSWICK	NEW JERSEY	82	05-83	2	BBCB		36,364	57,455
1	R01 GM30598-01 22250	TAYLOR, KENNETH A ELECTRON MICROSCOPE STUDIES ON MUSCLE	DUKE UNIVERSITY	DURHAM	NORTH CAROLINA	82	04-83	2	BBCB		61,188	86,568
1	R01 GM30741-01 12840	ASHER, SANFORD A UV RESONANCE RAMAN STUDIES OF PROTEIN STRUCTURE	UNIVERSITY OF PITTSBURGH	PITTSBURGH	PENNSYLVANIA	82	05-83	2	BBCB		109,175	129,026
7	R01 GM30819-01 22300	FREIRE, ERNESTO STATISTICAL THERMODYNAMIC STUDIES OF MEMBRANES	UNIVERSITY OF TENNESSEE KNOXVILLE	KNOXVILLE	TENNESSEE	82	12-82	0	BBCB		27,150	35,620
1	R01 GM30830-01 22550	SARMA, RAGHUPATHY STRUCTURE OF A SPECIFIC BACTERIAL PROTEIN	STATE UNIVERSITY NEW YORK STONY BROOK	STONY BROOK	NEW YORK	82	06-83	1	BBCB		29,003	41,395
1	R01 GM30969-01 22300	HUI, SEK-WEN MECHANISM OF POLYETHYLENE GLYCOL INDUCED MEMBRANE FUSION	ROSWELL PARK MEMORIAL INSTITUTE	BUFFALO	NEW YORK	82	06-83	2	BBCB		33,172	46,520
1	R01 GM31212-01 22550	PETSKO, GREGORY A STRUCTURE AND REACTION OF IRON SUPEROXIDE DISMUTASE	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	CAMBRIDGE	MASSACHUSETTS	82	06-83	2	BBCB		15,420	23,104
1	R01 GM31241-01 22500	PRENDERGAST, FRANKLYN G BIOPHYSICAL MECHANISMS IN MELITTIN INDUCED CYTOLYSIS	MAYO FOUNDATION	ROCHESTER	MINNESOTA	82	06-83	2	BBCB		59,038	75,677

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7	R01 GM31506-01 / 22300	BENTZ, JOSEPH E / MEMBRANE FUSION	UNIVERSITY OF CALIFORNIA	SAN FRANCISCO / SAN FRANCISCO CALIFORNIA	82	03-83	1	BBCB		40,495	53,048
***	0	* CENTERS								0	0
***	210	NONCENTERS								12,951,029	18,530,877
***	210	TOTAL								12,951,029	18,530,877
2	R01 GM02907-31 / 11910	LI, CHOH H / ACTH AND RELATED PEPTIDES	UNIVERSITY OF CALIFORNIA	SAN FRANCISCO / SAN FRANCISCO CALIFORNIA	82	02-83	4	BCE		119,852	157,006
1	R01 GM30270-01A1 / 21750	SCHOENBERG, DANIEL R / ESTROGEN ACTION IN XENOPUS LIVER	U.S. UNIFORMED SERVICES UNIV OF HLTH SCI	BETHESDA MARYLAND	82	06-83	2	BCE		42,038	42,038
***	0	* CENTERS								0	0
***	2	NONCENTERS								161,890	199,044
***	2	TOTAL								161,890	199,044
5	R01 GM04842-27 / 22300	HESS, GEORGE P / RELATIONSHIPS BETWEEN PROTEIN STRUCTURE AND FUNCTION	CORNELL UNIVERSITY ITHACA	ITHACA NEW YORK	82	08-83	0	BIO		53,829	76,414

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5	R01 GM05810-23 22300	ABRAMS, ADOLPH STRUCTURE AND FUNCTION OF BACTERIAL MEMBRANE ATPASE	UNIVERSITY OF COLORADO HLTH SCIENCES CTR	DENVER COLORADO	82	04-83	0	BIO		61,635	76,736
5	R01 GM05919-24 22450	LEHNINGER, ALBERT L ENERGY-COUPLING PROCESSES IN MITOCHONDRIA	JOHNS HOPKINS UNIVERSITY	BALTIMORE MARYLAND	82	02-83	1	BIO		176,462	262,993
5	R01 GM06590-24 22400	REED, LESTER J BIOCHEMISTRY OF ALPHA-KETO ACID DEHYDROGENASE COMPLEXES	UNIVERSITY OF TEXAS AUSTIN	AUSTIN TEXAS	82	07-83	2	BIO		104,587	141,192
5	R01 GM07581-22 21200	KORNBERG, ARTHUR MECHANISM AND CONTROL OF DNA REPLICATION	STANFORD UNIVERSITY	STANFORD CALIFORNIA	82	08-83	0	BIO		225,851	374,585
5	R01 GM07768-23 22400	HAGER, LOWELL P ENZYMATIC ACTIVATION MECHANISMS	UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN	URBANA ILLINOIS	82	08-83	0	BIO		82,410	116,504
5	R01 GM07884-21 22400	PARK, JANE H GLYCERALDEHYDE 3-PHOSPHATE DEHYDROGENASE	VANDERBILT UNIVERSITY	NASHVILLE TENNESSEE	82	03-83	2	BIO		64,285	97,685
5	R01 GM09293-20 22400	KIRKWOOD, SAMUEL USE OF ENZYMES IN STRUCTURAL CARBOHYDRATE CHEMISTRY	UNIVERSITY OF MINNESOTA OF MNPLS-ST PAUL	MINNEAPOLIS MINNESOTA	82	03-83	2	BIO		45,415	61,764
5	R01 GM09587-21 22400	GRAVES, DONALD J INTERCONVERSION & REGULATION OF GLYCOGEN METABOLISM	IOWA STATE UNIVERSITY OF SCIENCE & TECH	AMES IOWA	82	12-82	2	BIO		69,775	85,955
5	R01 GM10287-20 22400	FRIDOVICH, IRWIN BIOLOGY OF SUPEROXIDE RADICAL & SUPEROXIDE DISMUTASES	DUKE UNIVERSITY	DURHAM NORTH CAROLINA	82	08-83	1	BIO		118,664	177,996
5	R01 GM10451-18 22400	BERNHARD, SIDNEY A KINETIC ANALYSIS OF ENZYME CATALYSIS	UNIVERSITY OF OREGON	EUGENE OREGON	82	06-83	3	BIO		66,471	94,682
5	R01 GM10999-18 21750	LINGREL, JERRY B REGULATION OF GENE EXPRESSION IN MAMMALIAN CELLS	UNIVERSITY OF CINCINNATI	CINCINNATI OHIO	82	06-83	3	BIO		84,244	116,422
5	R01 GM11094-20 22450	BOYER, PAUL D BIOLOGICAL ENERGY TRANSDUCING MECHANISMS	UNIVERSITY OF CALIFORNIA LOS ANGELES	LOS ANGELES CALIFORNIA	82	04-83	2	BIO		104,008	135,320

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5	R01 GM11105-20 22400	FRANK, LEONARD METABOLISM OF CERTAIN AMINO ACIDS	UNIVERSITY OF MARYLAND AT BALTIMORE	BALTIMORE MARYLAND	82	05-83	0	BIO 89,028	135,323
5	R01 GM11106-20 22400	MASSEY, VINCENT BIOLOGICAL OXIDATION MECHANISMS	UNIVERSITY OF MICHIGAN AT ANN ARBOR	ANN ARBOR MICHIGAN	82	08-83	0	BIO 149,578	236,333
5	R01 GM11518-18 21100	GILHAM, PETER T FINE STRUCTURE OF NUCLEIC ACIDS	PURDUE UNIVERSITY WEST LAFAYETTE	WEST LAFAYETTE INDIANA	82	06-83	1	BIO 50,163	68,917
5	R01 GM12228-19 22450	MAHLER, HENRY R THE BIOSYNTHESIS OF RESPIRATORY ENZYMES	INDIANA UNIVERSITY BLOOMINGTON	BLOOMINGTON INDIANA	82	03-83	1	BIO 110,467	155,288
5	R01 GM12633-19 22400	ABELES, ROBERT H ENZYME MECHANISMS AND ENZYME INHIBITORS	BRANDEIS UNIVERSITY	WALTHAM MASSACHUSETTS	82	11-82	0	BIO 78,338	126,288
5	R01 GM13037-17 22400	MEHLER, ALAN H STRUCTURE AND FUNCTION OF AMINOACYL-TRNA SYNTHETASES	MEDICAL COLLEGE OF WISCONSIN	MILWAUKEE WISCONSIN	82	03-83	1	BIO 78,022	116,533
2	R01 GM13116-17 22400	STUEHR, JOHN E KINETIC INVESTIGATION OF BIOCHEMICAL REACTIONS	CASE WESTERN RESERVE UNIVERSITY	CLEVELAND OHIO	82	03-83	3	BIO 63,380	94,684
5	R01 GM13306-17 11920	BENKOVIC, STEPHEN J PHOSPHATE ACTIVATION MECHANISMS	PENNSYLVANIA STATE UNIVERSITY UNIV PARK	UNIVERSITY PARK PENNSYLVANIA	82	12-82	3	BIO 123,495	162,450
5	R01 GM13777-15 22400	KALLEN, ROLAND G BIOCHEMICAL CATALYSIS MECHANISMS--C-C & C-N BONDS	UNIVERSITY OF PENNSYLVANIA	PHILADELPHIA PENNSYLVANIA	82	11-82	2	BIO 80,847	133,398
2	R01 GM14931-16 21600	SCHIMKE, ROBERT T ENZYME SYNTHESIS AND DEGRADATION IN METABOLIC CONTROL	STANFORD UNIVERSITY	STANFORD CALIFORNIA	82	11-82	4	BIO 109,479	163,987
5	R01 GM14945-16 22400	WESTHEAD, EDWARD W, JR DIVALENT CATIONS IN ENOLASE AND OTHER BIOLOGICAL SYSTEMS	UNIVERSITY OF MASSACHUSETTS AMHERST	AMHERST MASSACHUSETTS	82	05-83	0	BIO 61,773	87,906
5	R01 GM15102-15 22400	KOHLHAW, GUNTER B REGULATION OF LEUCINE BIOSYNTHESIS	PURDUE UNIVERSITY WEST LAFAYETTE	WEST LAFAYETTE INDIANA	82	11-82	1	BIO 51,638	78,923

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2	R01 GM15188-15A1 22400	FISHER, HARVEY F STRUCTURE AND MECHANISMS OF ACTION OF ENZYMES	UNIVERSITY OF KANSAS COL HLTH SCI & HOSP	KANSAS CITY KANSAS	82	03-83	4	BIO		72,115	95,366
3	P01 GM15731-14S1 22500	WALSH, KENNETH A PROTEOLYSIS AND PROCESSING OF PROTEIN STRUCTURES	UNIVERSITY OF WASHINGTON	SEATTLE WASHINGTON	82	11-82	0	BIO	1	66,750	89,445
5	R01 GM16564-14 22400	FIFE, THOMAS H ENZYMATIC AND NONENZYMATIC REACTIONS OF ACYL PHOSPHATES	UNIVERSITY OF SOUTHERN CALIFORNIA	LOS ANGELES CALIFORNIA	82	03-83	0	BIO		41,179	60,121
5	R01 GM16767-14 22450	KING, TSOO E RECONSTITUTION OF MITOCHONDRIAL RESPIRATORY CHAIN	STATE UNIVERSITY OF NEW YORK AT ALBANY	ALBANY NEW YORK	82	11-82	2	BIO		75,538	108,011
5	R01 GM18172-12 22400	FRUTON, JOSEPH S PROTEIN CONFORMATION AND ENZYME CATALYSIS	YALE UNIVERSITY	NEW HAVEN CONNECTICUT	82	05-83	2	BIO		66,892	105,689
5	R01 GM18325-12 22400	WOLFENDEN, RICHARD V CHEMICAL MECHANISMS OF BIOSYNTHESIS	UNIVERSITY OF NORTH CAROLINA CHAPEL HILL	CHAPEL HILL NORTH CAROLINA	82	06-83	2	BIO		83,853	112,911
5	R01 GM18453-08 22400	SILVERSTEIN, EMANUEL ENZYME MECHANISM AND CONTROL	DOWNSTATE MEDICAL CENTER	NEW YORK NEW YORK	81	11-82	0	BIO		53,859	76,747
5	R01 GM18648-11 22450	ERMAN, JAMES E THE MECHANISM OF CYTOCHROME C PEROXIDASE CATALYSIS	NORTHERN ILLINOIS UNIVERSITY	DE KALB ILLINOIS	82	07-83	0	BIO		46,730	64,575
5	R01 GM18796-11 21320	GUPTA, NABA K GENETIC CODE, PROTEIN SYNTHESIS IN MAMMALIAN SYSTEMS	UNIVERSITY OF NEBRASKA LINCOLN	LINCOLN NEBRASKA	82	11-82	0	BIO		50,556	69,767
5	R01 GM18852-12 11920	FLOSS, HEINZ G STEREOCHEMISTRY OF ENZYME REACTIONS	PURDUE UNIVERSITY WEST LAFAYETTE	WEST LAFAYETTE INDIANA	82	08-83	2	BIO		96,955	134,617
2	R01 GM18938-11 22400	CLELAND, WILLIAM W DETERMINATION OF ENZYME MECHANISMS BY KINETIC STUDIES	UNIVERSITY OF WISCONSIN MADISON	MADISON WISCONSIN	82	12-82	4	BIO		90,000	126,701
5	R01 GM19036-14 11860	PETERSON, JULIAN A REGULATION OF MICROBIAL OXIDATION REACTIONS	UNIVERSITY OF TEXAS HLTH SCI CTR DALLAS	DALLAS TEXAS	82	04-83	2	BIO		51,895	69,934

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2	R01 GM19037-09 22400	KAISER, EMIL T PHOSPHATE TRANSFER ENZYMES	UNIVERSITY OF CHICAGO	CHICAGO ILLINOIS	82	12-82	3	BIO	75,214	113,070
2	R01 GM19122-10A1 21200	MOSES, ROBB E MECHANISMS OF CHROMOSOME REPLICATION	BAYLOR COLLEGE OF MEDICINE	HOUSTON TEXAS	82	08-83	2	BIO	69,746	91,183
5	R01 GM19394-09 22300	KIRTLEY, MARY E STUDY OF GLYCOLYTIC ENZYMES BOUND TO MEMBRANES	UNIVERSITY OF MARYLAND AT BALTIMORE	BALTIMORE MARYLAND	81	11-82	0	BIO	51,471	85,957
2	R01 GM19395-11 21100	GILHAM, P T SYNTHESIS OF POLYRIBONUCLEOTIDES OF DEFINED SEQUENCE	PURDUE UNIVERSITY WEST LAFAYETTE	WEST LAFAYETTE INDIANA	82	04-83	4	BIO	75,118	96,556
5	R01 GM19595-09 22450	DILLEY, RICHARD A PROTON-MEMBRANE INTERACTIONS IN BIOENERGETICS	PURDUE UNIVERSITY WEST LAFAYETTE	WEST LAFAYETTE INDIANA	81	02-83	0	BIO	42,216	62,158
5	R01 GM19643-09 22400	HAGEMAN, JAMES H SERINE PROTEASES AND PROTEIN TURNOVER IN BACILLI	NEW MEXICO STATE UNIVERSITY LAS CRUCES	LAS CRUCES NEW MEXICO	81	11-82	0	BIO	38,580	55,725
5	R01 GM19807-10 22300	LATIES, GEORGE G MEMBRANE PERMEABILITY AS A REGULATORY ELEMENT	UNIVERSITY OF CALIFORNIA LOS ANGELES	LOS ANGELES CALIFORNIA	81	11-82	0	BIO	60,785	79,318
5	R01 GM20077-08 22400	BARDEN, ROLAND E AFFINITY LABELS FOR ACYL-COA UTILIZING ENZYME	UNIVERSITY OF WYOMING	LARAMIE WYOMING	82	03-83	1	BIO	45,621	63,413
5	R01 GM20176-10 21250	SHAPIRO, ROBERT DAMAGED DNA: THE STRUCTURE OF DNA CROSS-LINKS	NEW YORK UNIVERSITY	NEW YORK NEW YORK	82	08-83	0	BIO	53,260	78,225
2	R01 GM20198-09 11920	SCHOWEN, RICHARD L ENZYME-EFFECTOR DESIGN	UNIVERSITY OF KANSAS LAWRENCE	LAWRENCE KANSAS	82	06-83	2	BIO 1	87,001	116,275
5	R01 GM20379-09 22450	TRUMPOWER, BERNARD L STRUCTURE AND FUNCTION OF HEART MEMBRANE PROTEINS	DARTMOUTH COLLEGE	HANOVER NEW HAMPSHIRE	82	11-82	2	BIO	60,146	89,798
3	R01 GM20379-09S1 22450	TRUMPOWER, BERNARD L STRUCTURE AND FUNCTION OF HEART MEMBRANE PROTEINS	DARTMOUTH COLLEGE	HANOVER NEW HAMPSHIRE	82	11-82	2	BIO	15,086	22,523

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5	R01 GM20419-05 22400	CASTRIC, PETER A PURIFICATION AND CHARACTERIZATION OF UREA AMIDOYLASE	DUQUESNE UNIVERSITY	PITTSBURGH PENNSYLVANIA	81	11-82	0	BIO		25,910	42,695
2	R01 GM20478-10 22300	DOWHAN, WILLIAM STRUCTURE AND FUNCTION OF MEMBRANE PROTEINS	UNIVERSITY OF TEXAS HLTH SCI CTR HOUSTON	HOUSTON TEXAS	82	06-83	4	BIO	1	73,200	97,216
5	R01 GM20552-06 22300	KUN, ERNEST ENZYMOLOGY OF GLUTATHIONE-CARBOXYLIC ACID THIOESTERS	UNIVERSITY OF CALIFORNIA	SAN FRANCISCO SAN FRANCISCO CALIFORNIA	81	11-82	0	BIO		48,676	63,766
5	R01 GM20656-24 22400	COLOWICK, SIDNEY P ENZYMATIC OXIDATION AND PHOSPHORYLATION	VANDERBILT UNIVERSITY	NASHVILLE TENNESSEE	82	11-82	1	BIO		96,114	147,406
5	R01 GM20716-09 22400	SUELTER, CLARENCE H COMPARATIVE ENZYMOLOGY OF NORMAL AND ABNORMAL TISSUE	MICHIGAN STATE UNIVERSITY	EAST LANSING MICHIGAN	82	05-83	1	BIO		45,195	63,725
5	R01 GM20853-20 22400	BENDER, MYRON L MECHANISM OF ACTION OF PROTEASES	NORTHWESTERN UNIVERSITY	EVANSTON ILLINOIS	82	06-83	1	BIO		35,317	48,509
5	R01 GM20888-25 22400	JENCKS, WILLIAM P CHEMISTRY AND BIOCHEMISTRY OF ENERGY TRANSFER	BRANDEIS UNIVERSITY	WALTHAM MASSACHUSETTS	82	11-82	1	BIO		79,842	128,662
5	R01 GM21083-07 22400	SCHRAMM, VERN L REGULATION OF ADENINE NUCLEOTIDE POOLS	TEMPLE UNIVERSITY	PHILADELPHIA PENNSYLVANIA	82	01-83	0	BIO		36,572	55,584
5	R01 GM21161-08 22500	GUNSALUS, IRWIN C PROTEIN STRUCTURE MODIFICATION AND OXIDATION	UNIVERSITY OF ILLINOIS	URBANA-CHAMPAIGN URBANA ILLINOIS	82	11-82	2	BIO		62,413	88,876
5	R01 GM21199-14 22400	SIGMAN, DAVID S METAL ION FUNCTION IN ENZYMES AND RECEPTOR PROTEINS	UNIVERSITY OF CALIFORNIA	LOS ANGELES LOS ANGELES CALIFORNIA	82	11-82	2	BIO		65,575	85,438
5	R01 GM21200-09 22400	COLMAN, ROBERTA F NUCLEOTIDE SITES OF GLUTAMATE DEHYDROGENASE	UNIVERSITY OF DELAWARE	NEWARK DELAWARE	82	05-83	2	BIO		53,951	82,563
5	R01 GM21226-21 22400	KAMIN, HENRY BIOLOGICAL OXIDATIONS IN MITOCHONDRIA AND MICROSOMES	DUKE UNIVERSITY	DURHAM NORTH CAROLINA	82	05-83	1	BIO		91,974	134,461

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5	R01 GM21361-09 22400	THOMPSON, W JOSEPH BIOLOGICAL ROLE OF CYCLIC NUCLEOTIDE PHOSPHODIESTERASE	UNIVERSITY OF TEXAS HLTH SCI CTR HOUSTON	HOUSTON TEXAS	82	06-83	1	BIO	94,867	130,308
5	R01 GM21363-09 22500	BREW, KEITH CHEMICAL STUDIES OF ENZYMES AND PROTEINS	UNIVERSITY OF MIAMI	MIAMI FLORIDA	82	05-83	2	BIO	99,390	164,987
5	R01 GM21436-08 22400	DATTA, PRASANTA ALLOSTERIC ENZYMES AND METABOLIC REGULATION	UNIVERSITY OF MICHIGAN AT ANN ARBOR	ANN ARBOR MICHIGAN	82	02-83	2	BIO	51,807	81,855
5	R01 GM21444-18 22400	WILLIAMS, CHARLES H, JR PYRIDINE NUCLEOTIDE-DISULFIDE OXIDOREDUCTASES	UNIVERSITY OF MICHIGAN AT ANN ARBOR	ANN ARBOR MICHIGAN	82	08-83	1	BIO	51,754	68,148
5	R01 GM21524-08 22450	WILSON, DAVID F REGULATION AND 02 DEPENDENCE OF CELLULAR METABOLISM	UNIVERSITY OF PENNSYLVANIA	PHILADELPHIA PENNSYLVANIA	82	11-82	2	BIO	62,811	101,688
5	R01 GM21643-08 22400	WALSH, CHRISTOPHER T COENZYME ANALOGUES AS PROBES OF FLAVOENZYME CATALYSIS	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	CAMBRIDGE MASSACHUSETTS	82	04-83	0	BIO	62,933	85,041
5	R01 GM21648-08 22450	ROSEN, BARRY P BIOENERGETICS OF MICROBIAL MEMBRANE FUNCTIONS	UNIVERSITY OF MARYLAND AT BALTIMORE	BALTIMORE MARYLAND	82	06-83	0	BIO	51,569	77,865
5	R01 GM21659-08 22400	KNOWLES, JEREMY R MECHANISMS OF ENZYME CATALYSIS	HARVARD UNIVERSITY	CAMBRIDGE MASSACHUSETTS	82	11-82	1	BIO	88,298	135,979
5	R01 GM21726-07 22500	DUS, KARL M COMPARATIVE STRUCTURAL STUDIES OF P-450 HEMEPROTEINS	ST. LOUIS UNIVERSITY	SAINT LOUIS MISSOURI	82	03-83	0	BIO	52,153	78,230
5	R01 GM21737-16 22450	PENEFSKY, HARVEY S MITOCHONDRIAL MEMBRANE AND OXIDATIVE PHOSPHORYLATION	PUBLIC HLTH RES INST OF THE CITY OF NY	NEW YORK NEW YORK	82	12-82	2	BIO	93,272	129,118
2	R01 GM21782-07 21200	HINKLE, DAVID C ENZYMATIC MECHANISM OF DNA REPLICATION	UNIVERSITY OF ROCHESTER	ROCHESTER NEW YORK	82	05-83	4	BIO	65,027	110,927
5	R01 GM21839-08 21200	GRAY, HORACE B, JR NUCLEIC ACID MODIFICATION WITH SPECIFIC ENDONUCLEASES	UNIVERSITY OF HOUSTON AT HOUSTON	HOUSTON TEXAS	82	03-83	1	BIO	59,906	77,878

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5	R01 GM21909-06 22300	HULETT, F MARION MEMBRANE PROTEIN-PROTEIN SECRETION STUDIES	UNIVERSITY OF ILLINOIS CHICAGO CIRCLE	CHICAGO ILLINOIS	81	03-83	0	BIO		41,042	71,824
5	R01 GM22079-08 21320	GUPTA, NABA K PROTEIN SYNTHESIS INITIATION IN RED BLOOD CELLS	UNIVERSITY OF NEBRASKA LINCOLN	LINCOLN NEBRASKA	82	04-83	3	BIO		65,205	89,983
2	R01 GM22127-07A1 21750	WEAVER, ROBERT F TRANSCRIPTION CONTROL IN NUCLEAR POLYHEDROSIS VIRUS	UNIVERSITY OF KANSAS LAWRENCE	LAWRENCE KANSAS	82	06-83	2	BIO	1	27,138	33,935
2	R01 GM22333-16 21280	SIMPSON, MELVIN V MITOCHONDRIA: NUCLEIC ACID SYNTHESIS AND ROLE OF DNA	STATE UNIVERSITY NEW YORK STONY BROOK	STONY BROOK NEW YORK	82	06-83	2	BIO		60,798	89,430
2	R01 GM22350-07 22400	GERLT, JOHN A ENZYMOLOGY OF PHOSPHORUS METABOLISM	YALE UNIVERSITY	NEW HAVEN CONNECTICUT	82	06-83	2	BIO	1	80,549	122,198
5	R01 GM22427-07 22400	LOEWUS, FRANK A INOSITOL METABOLISM	WASHINGTON STATE UNIVERSITY	PULLMAN WASHINGTON	81	02-83	0	BIO		80,786	117,140
5	R01 GM22434-06 22400	ANDERSON, PAUL M CYNATE--REACTION WITH CYANASE & AMIDOTRANSFERASE	UNIVERSITY OF MINNESOTA OF MNPLS-ST PAUL	MINNEAPOLIS MINNESOTA	82	03-84	0	BIO		30,450	41,412
5	R01 GM22579-08 22400	WOOD, HARLAND G SUBUNIT-SUBUNIT INTERACTIONS OF TRANSCARBOXYLASE	CASE WESTERN RESERVE UNIVERSITY	CLEVELAND OHIO	82	08-83	2	BIO		128,474	187,541
5	R01 GM22744-07 11910	GURIN, SAMUEL BIOSYNTHESIS AND FUNCTION OF PYRIDINE CARBOXYLIC ACIDS	UNIVERSITY OF FLORIDA	GAINESVILLE FLORIDA	82	03-83	0	BIO		23,597	30,908
2	R01 GM22749-07 21750	DICKSON, ROBERT C EUCARYOTIC ENZYME INDUCTION: B-GALACTOSIDASE IN YEAST	UNIVERSITY OF KENTUCKY	LEXINGTON KENTUCKY	82	03-83	4	BIO		92,496	126,070
5	R01 GM22751-05 22450	LEE, CHUAN-PU SUBCELLULAR RESPIRATORY FUNCTIONS OF CARDIAC MUSCLE	WAYNE STATE UNIVERSITY	DETROIT MICHIGAN	81	03-83	0	BIO		67,113	98,291
5	R01 GM22792-06 22400	RUBIN, CHARLES S CYCLIC AMP AND PROTEIN KINASES IN CELL REGULATION	YESHIVA UNIVERSITY	NEW YORK NEW YORK	82	03-83	2	BIO		71,773	132,208

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5	R01 GM22854-07 21320	SOLL, DIETER G TRANSFER RNA	YALE UNIVERSITY	NEW HAVEN CONNECTICUT	82	02-83	3	BIO 205,704	314,838
5	R01 GM22933-05 22400	VAN ETTEN, ROBERT L THE ANOMALOUS KINETICS OF ARYL SULFATASE A	PURDUE UNIVERSITY WEST LAFAYETTE	WEST LAFAYETTE INDIANA	82	12-82	3	BIO 72,864	102,010
2	R01 GM22982-07 22400	OPPENHEIMER, NORMAN J STRUCTURE/FUNCTION RELATIONS IN PYRIDINE COENZYMES	UNIVERSITY OF CALIFORNIA SAN FRANCISCO	SAN FRANCISCO CALIFORNIA	82	04-83	4	BIO 84,759	109,579
5	R01 GM23028-06 22400	BUTLER, LARRY G RELATIONSHIPS OF PHOSPHOMONO- AND PHOSPHODIESTERASES	PURDUE UNIVERSITY WEST LAFAYETTE	WEST LAFAYETTE INDIANA	82	06-83	2	BIO 56,707	76,766
5	R01 GM23045-07 21320	LEBHERZ, HERBERT G REGULATION OF INTRACELLULAR ENZYME CONCENTRATIONS	SAN DIEGO STATE UNIVERSITY	SAN DIEGO CALIFORNIA	82	06-83	1	BIO 58,914	82,782
5	R01 GM23451-05 21200	CHASE, JOHN W BIOCHEMICAL STUDIES OF E COLI EXONUCLEASE 7	YESHIVA UNIVERSITY	NEW YORK NEW YORK	82	12-82	3	BIO 38,847	66,235
5	R01 GM23453-05 22400	KRUMDIECK, CARLOS L STUDIES ON THE BIOCHEMISTRY PTEROYPOLYGLUTAMATES	UNIVERSITY OF ALABAMA IN BIRMINGHAM	BIRMINGHAM ALABAMA	82	08-83	0	BIO 55,609	75,517
5	R01 GM23642-06 22400	MARNETT, LAWRENCE J PROSTAGLANDIN SYNTHETASE	WAYNE STATE UNIVERSITY	DETROIT MICHIGAN	82	12-82	0	BIO 49,542	73,376
5	R01 GM23679-03 22400	LAWTON, RICHARD G REAGENTS FOR EQUILIBRIUM PROTEIN CROSS-LINKS	UNIVERSITY OF MICHIGAN AT ANN ARBOR	ANN ARBOR MICHIGAN	81	09-82	0	BIO 47,047	74,334
5	R01 GM23719-07 21200	MODRICH, PAUL L ENZYMATIC BASIS OF TYPE II RESTRICTION AND MODIFICATION	DUKE UNIVERSITY	DURHAM NORTH CAROLINA	82	07-83	3	BIO 146,320	219,480
5	R01 GM23773-07 11920	HOGENKAMP, HENRICUS P STRUCTURE AND REACTIONS OF THE COBAMIDE COENZYMES	UNIVERSITY OF MINNESOTA OF MNPLS-ST PAUL	MINNEAPOLIS MINNESOTA	82	08-83	0	BIO 83,866	116,574
5	R01 GM23869-06 22450	TIMKOVICH, RUSSELL ENZYMIC REACTIONS OF DISSIMILATORY NITRITE REDUCTASES	ILLINOIS INSTITUTE OF TECHNOLOGY	CHICAGO ILLINOIS	82	03-83	1	BIO 48,080	77,392

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5	R01 GM24290-05 22400	GARBERS, DAVID L GUANYLATE CYCLASE: LARGE SCALE PURIFICATION	VANDERBILT UNIVERSITY	NASHVILLE	TENNESSEE	82	12-82	0	BIO 66,427	102,630
5	R01 GM24294-05 21750	JENDRISAK, JEROME J REGULATION OF EUKARYOTIC GENE TRANSCRIPTION	UNIVERSITY OF MINNESOTA OF MNPLS-ST PAUL	MINNEAPOLIS	MINNESOTA	81	12-82	0	BIO 44,322	60,278
5	R01 GM24330-05 21320	HATFIELD, G WESLEY TRANSLATIONAL CONTROL OF TRANSCRIPTION TERMINATION	UNIVERSITY OF CALIFORNIA IRVINE	IRVINE	CALIFORNIA	82	11-82	3	BIO 78,431	102,745
5	R01 GM24383-04 22300	COOPER, TERRANCE G SYNTHESIS AND ASSEMBLY OF EUCARYOTIC MEMBRANES	UNIVERSITY OF PITTSBURGH	PITTSBURGH	PENNSYLVANIA	82	12-82	1	BIO 53,427	80,429
2	R01 GM24441-04 21200	BAMBARA, ROBERT A ENZYMATIC MECHANISMS OF DNA SYNTHESIS	UNIVERSITY OF ROCHESTER	ROCHESTER	NEW YORK	82	12-82	2	BIO 63,419	98,619
5	R01 GM24459-05 22300	SCHNEIDER, DONALD L ENZYMES LINKING BIOENERGY TO CATABOLISM IN LYSOSOMES	DARTMOUTH COLLEGE	HANOVER	NEW HAMPSHIRE	82	06-83	0	BIO 29,628	43,998
2	R01 GM24497-05 22400	TABITA, FRED R FUNCTION AND ASSEMBLY OF CO2 ASSIMILATORY ENZYMES	UNIVERSITY OF TEXAS AUSTIN	AUSTIN	TEXAS	82	12-82	4	BIO 69,318	92,529
5	R01 GM24527-06 22500	STEINMAN, HOWARD M SUPEROXIDE DISMUTASES: STRUCTURE, FUNCTION, EVOLUTION	YESHIVA UNIVERSITY	NEW YORK	NEW YORK	82	04-83	0	BIO 68,310	126,277
5	R01 GM24561-05 22400	HUNTER, F EDMUND, JR GSH-SPECIFIC ENZYMES ON ORGANONITRATES, PROSTAGLANDINS	WASHINGTON UNIVERSITY	SAINT LOUIS	MISSOURI	82	12-82	0	BIO 39,500	61,225
5	R01 GM24686-05 22400	GRAY, WILLIAM R STRUCTURE, FUNCTION, GENETICS OF HISTIDINOL DH'ASE	UNIVERSITY OF UTAH	SALT LAKE CITY	UTAH	82	03-83	1	BIO 78,678	108,683
5	R01 GM24688-05 21200	BROWN, WILLIAM E STRUCTURAL STUDIES OF DNA POLYMERASE 1	CARNEGIE-MELLON UNIVERSITY	PITTSBURGH	PENNSYLVANIA	82	12-82	1	BIO 63,676	91,661
5	R01 GM24765-03 22400	BYERS, LARRY D LIGAND INDUCED CHANGES IN MULTI-SUBUNIT ENZYMES	TULANE UNIVERSITY OF LOUISIANA	NEW ORLEANS	LOUISIANA	81	11-82	0	BIO 25,769	36,504

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5	R01 GM24908-05 22400	MATTHEWS, ROWENA G REGULATION OF FOLATE METABOLISM	UNIVERSITY OF MICHIGAN AT ANN ARBOR	ANN ARBOR MICHIGAN	82	03-83	3	BIO 60,077	93,762
5	R01 GM24913-05 22400	WOOD, HARLAND G UTILIZATION OF CO2 AND THE TOTAL SYNTHESIS OF ACETATE	CASE WESTERN RESERVE UNIVERSITY	CLEVELAND OHIO	82	03-83	0	BIO 69,775	97,561
2	R01 GM24950-07 21200	KOWALSKI, DAVID STUDY OF LIMITED ENZYMATIC CLEAVAGE OF NATIVE DNA	ROSWELL PARK MEMORIAL INSTITUTE	BUFFALO NEW YORK	81	05-83	0	BIO 40,764	57,732
2	R01 GM25022-04 21200	SARKAR, NILIMA INVOLVEMENT OF RNA IN DNA SYNTHESIS	BOSTON BIOMEDICAL RESEARCH INSTITUTE	BOSTON MASSACHUSETTS	82	03-83	2	BIO 54,248	77,770
5	R01 GM25055-05 22400	ABBOTT, MITCHEL T PYRIMIDINE & PROLYL ALPHA-KETOGLUTARATE DIOXYGENASES	SAN DIEGO STATE UNIVERSITY	SAN DIEGO CALIFORNIA	82	04-83	0	BIO 33,111	46,687
5	R01 GM25250-06 22450	TZAGOLOFF, ALEXANDER A BIOSYNTHESIS OF CYTOCHROME OXIDASE	COLUMBIA UNIVERSITY	NEW YORK NEW YORK	82	08-83	0	BIO 35,483	60,215
2	R01 GM25295-07 22500	VANDERJAGT, DAVID L BILIRUBIN TRANSPORT PROTEINS	UNIVERSITY OF NEW MEXICO ALBUQUERQUE	ALBUQUERQUE NEW MEXICO	82	11-82	2	BIO 73,860	98,186
5	R01 GM25451-03 21320	WAHBA, ALBERT J PROTEIN SYNTHESIS IN PROKARYOTES AND EUKARYOTES	UNIVERSITY OF MISSISSIPPI MEDICAL CENTER	JACKSON MISSISSIPPI	80	08-83	0	BIO 46,084	61,954
5	R01 GM25457-05 21200	MC HENRY, CHARLES S REGULATION OF THE SYNTHESIS OF REPLICATION PROTEINS	UNIVERSITY OF TEXAS HLTH SCI CTR HOUSTON	HOUSTON TEXAS	82	08-83	1	BIO 34,016	45,802
2	R01 GM25478-04 22400	HEHRE, EDWARD J SCOPE AND MECHANISM OF ENZYME-CATALYZED GLYCOSYLATION	YESHIVA UNIVERSITY	NEW YORK NEW YORK	82	08-83	4	BIO 71,069	132,188
5	R01 GM25486-04 22400	FRERMAN, FRANK E ACYL COA DEHYDROGENASES--REGULATION OF BETA-OXIDATION	MEDICAL COLLEGE OF WISCONSIN	MILWAUKEE WISCONSIN	81	12-82	0	BIO 76,274	91,312
5	R01 GM25487-03 22400	ORNSTON, L NICHOLAS ORIGINS OF METABOLIC DIVERSITY	YALE UNIVERSITY	NEW HAVEN CONNECTICUT	80	11-82	0	BIO 54,323	83,101

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3	R01 GM25487-0351 22400	ORNSTON, L NICHOLAS ORIGINS OF METABOLIC DIVERSITY	YALE UNIVERSITY	NEW HAVEN	81 CONNECTICUT	11-82	0	BIO 12,156	19,206
5	R01 GM25683-04 22450	MOUDRIANAKIS, EVANGELOS N ENZYMOLOGY OF MITOCHONDRIAL ATP SYNTHESIS	JOHNS HOPKINS UNIVERSITY	BALTIMORE	82 MARYLAND	04-83	1	BIO 59,360	86,565
2	R01 GM25697-04 22400	MILLER, JON P MAPPING CAMP AND CGMP BINDING SITES ON PROTEIN KINASES	SRI INTERNATIONAL	MENLO PARK	82 CALIFORNIA	11-82	2	BIO 75,335	146,453
2	R01 GM25729-04 21100	GREENE, PATRICIA J SEQUENCE-SPECIFIC DNA-PROTEIN INTERACTIONS	UNIVERSITY OF CALIFORNIA	SAN FRANCISCO SAN FRANCISCO	82 CALIFORNIA	11-82	2	BIO 50,000	65,500
2	R01 GM25765-05 NS 22400	KLINMAN, JUDITH P DOPAMINE-B-HYDROXYLASE: MOLECULAR MECHANISMS	UNIVERSITY OF CALIFORNIA	BERKELEY BERKELEY	82 CALIFORNIA	05-83	2	BIO 102,463	128,629
2	R01 GM25819-04 11770	BRUNTON, LAURENCE L DRUG MODULATED EXTRUSION OF CELLULAR CYCLIC AMP	UNIVERSITY OF CALIFORNIA	SAN DIEGO LA JOLLA	82 CALIFORNIA	11-82	2	BIO 54,823	70,241
5	R01 GM26038-03 21320	RICHARDSON, JOHN P ENZYMES OF NUCLEAR RNA METABOLISM	INDIANA UNIVERSITY BLOOMINGTON	BLOOMINGTON	81 INDIANA	04-83	0	BIO 31,271	43,477
2	R01 GM26237-04 22400	KANTROWITZ, EVAN R THE MOLECULAR BASIS OF CELLULAR CONTROL MECHANISMS	BOSTON COLLEGE	CHESTNUT HILL	82 MASSACHUSETTS	03-83	3	BIO 94,792	125,244
2	R01 GM26290-04 22400	PEGG, ANTHONY E INVESTIGATIONS OF MAMMALIAN AMINOPROPYLTRANSFERASES	PENNSYLVANIA STATE UNIV	HERSHEY MED CTR HERSHEY	82 PENNSYLVANIA	03-83	4	BIO 64,228	86,893
5	R01 GM26351-04 22300	OZOLS, JURIS B STRUCTURE AND PROTEOLYSIS OF HEPATIC MEMBRANE PROTEINS	UNIVERSITY OF CONNECTICUT	HEALTH CENTER FARMINGTON	82 CONNECTICUT	06-83	1	BIO 85,703	124,269
5	R01 GM26387-03 22400	MALEY, FRANK FOLATE BINDING SITES IN THYMIDYLATE SYNTHETASE	NEW YORK STATE DEPARTMENT	OF HEALTH ALBANY	81 NEW YORK	12-82	0	BIO 16,500	16,500
2	R01 GM26488-04 22400	GUYNN, ROBERT W KINETICS AND THERMODYNAMICS OF SERINE BIOSYNTHESIS	UNIVERSITY OF TEXAS HLTH	SCI CTR HOUSTON HOUSTON	82 TEXAS	03-83	2	BIO 61,068	81,424

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5	R01 GM26582-05 22400	WEDLER, FREDERICK C CATALYTIC AND REGULATORY MECHANISMS OF KEY ENZYMES	PENNSYLVANIA STATE UNIVERSITY UNIV PARK	UNIVERSITY PARK PENNSYLVANIA	82	08-83	0	BIO 58,470	79,321
5	R01 GM26604-03 11770	LEVITZKI, ALEXANDER BETA-ADRENERGIC RECEPTOR ADENYLATE CYCLASE COMPLEX	HEBREW UNIVERSITY OF JERUSALEM	JERUSALEM ISRAEL	81	02-83	0	BIO 43,415	43,415
5	R01 GM26623-02 22400	WONG, SHAN S ENZYME REGULATION BY PROTEIN-PROTEIN INTERACTION	UNIVERSITY OF LOWELL	LOWELL MASSACHUSETTS	82	12-82	1	BIO 41,289	70,548
5	R01 GM26682-03 22400	JORDAN, FRANK PURINE NUCLEOSIDE PHOSPHORYLASE STUDIES	RUTGERS THE STATE UNIV NEWARK	NEWARK NEW JERSEY	81	03-83	0	BIO 38,917	61,489
5	R01 GM26728-03 22400	SEGEL, IRWIN H ENZYMOLOGY OF SULFATE ACTIVATION AND TRANSFER	UNIVERSITY OF CALIFORNIA DAVIS	DAVIS CALIFORNIA	81	10-82	0	BIO 54,185	70,517
5	R01 GM26740-04 21310	ROSE, KATHLEEN M REGULATION OF RNA POLYMERASE I GENE EXPRESSION	PENNSYLVANIA STATE UNIV HERSHEY MED CTR	HERSHEY PENNSYLVANIA	82	06-83	1	BIO 30,971	41,501
5	R01 GM26764-03 22450	SANADI, D RAO HYDROGEN ION TRANSLOCATION--VESICLES & PLANAR BILAYERS	BOSTON BIOMEDICAL RESEARCH INSTITUTE	BOSTON MASSACHUSETTS	81	12-82	0	BIO 52,071	76,588
5	R01 GM26900-03 22400	IVES, DAVID H MECHANISMS OF NUCLEOSIDE KINASE REGULATION	OHIO STATE UNIVERSITY	COLUMBUS OHIO	81	06-83	0	BIO 33,228	45,115
5	R01 GM26924-03 22450	PULLMAN, MAYNARD E ROLE OF ATPASE INHIBITOR IN OXIDATIVE PHOSPHORYLATION	PUBLIC HLTH RES INST OF THE CITY OF NY	NEW YORK NEW YORK	82	11-82	2	BIO 59,378	80,998
5	R01 GM26985-03 21320	KOZARICH, JOHN W CHEMISTRY AND BIOCHEMISTRY OF 7-METHYLGUANOSINE	YALE UNIVERSITY	NEW HAVEN CONNECTICUT	82	07-83	0	BIO 47,240	78,323
5	R01 GM26986-03 21250	EHRLICH, MELANIE MUTAGENESIS AT 5-METHYLCYTOSINE RESIDUES IN DNA	TULANE UNIVERSITY OF LOUISIANA	NEW ORLEANS LOUISIANA	81	08-83	0	BIO 35,096	46,947
5	R01 GM26994-03 21280	SCHWARTZBACH, STEVEN D REGULATION OF ORGANELLE BIOGENESIS	UNIVERSITY OF NEBRASKA LINCOLN	LINCOLN NEBRASKA	81	01-83	0	BIO 33,121	45,707

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5	R01 GM27003-13 22400	VAN ETTEN, ROBERT L THE ACTIVE SITES OF ACID PHOSPHATASES	PURDUE UNIVERSITY	WEST LAFAYETTE WEST LAFAYETTE	82 INDIANA	06-83	1	BIO		71,890	96,878
5	R01 GM27043-03 22450	TEDESCHI, HENRY THE ELECTRICAL PROPERTIES OF TRANSDUCING MEMBRANES	STATE UNIVERSITY OF NEW YORK AT ALBANY	ALBANY	82 NEW YORK	12-82	1	BIO		46,586	65,983
5	R01 GM27083-03 22400	HAMILTON, GORDON A SOME OXIDASE CATALYZED REACTIONS INVOLVING GLYOXYLATE	PENNSYLVANIA STATE UNIVERSITY UNIV PARK	UNIVERSITY PARK	82 PENNSYLVANIA	11-82	0	BIO		34,160	46,098
5	R01 GM27085-03 22450	WEBSTER, DALE A A MODEL FOR COMPLEX ELECTRON TRANSPORT CHAINS	ILLINOIS INSTITUTE OF TECHNOLOGY	CHICAGO	82 ILLINOIS	12-82	1	BIO		47,615	80,082
5	R01 GM27087-03 22300	LEVITZKI, ALEXANDER THE ADENOSINE RECEPTOR AND ITS MODE OF COUPLING	HEBREW UNIVERSITY OF JERUSALEM	JERUSALEM	82 ISRAEL	03-83	0	BIO		46,728	46,728
5	R01 GM27151-03 11760	WATERMAN, MICHAEL R MOLECULAR BASIS OF CYTOCHROME P-450 INDUCTION	UNIVERSITY OF TEXAS HLTH SCI CTR DALLAS	DALLAS	82 TEXAS	03-83	0	BIO		15,461	20,950
5	R01 GM27210-02 21320	WU, JOSEPH M TRANSLATIONAL CONTROL MECHANISMS	NEW YORK MEDICAL COLLEGE	VALHALLA	82 NEW YORK	12-82	1	BIO		46,296	73,561
5	R01 GM27239-03 22400	INGRAHAM, LLOYD L FLAVINS IN HYDROXYLATION AND BIOLUMINESCENCE	UNIVERSITY OF CALIFORNIA DAVIS	DAVIS	82 CALIFORNIA	03-83	0	BIO		34,086	44,653
5	R01 GM27358-02 21250	DEUTSCH, WALTER A ALKYLATION DAMAGE AND ITS REPAIR IN DROSOPHILA	LOUISIANA STATE UNIV A&M COL BATON ROUGE	BATON ROUGE	82 LOUISIANA	01-83	1	BIO		35,659	44,074
5	R01 GM27608-14 21200	ENGLUND, PAUL T STRUCTURE AND SYNTHESIS OF DNA	JOHNS HOPKINS UNIVERSITY	BALTIMORE	82 MARYLAND	12-82	2	BIO		108,084	162,126
5	R01 GM27617-03 11910	ANDERSON, JOHN A CYTOCHROME P-450 IN ERGOT ALKALOID BIOSYNTHESIS	TEXAS TECH UNIVERSITY	LUBBOCK	82 TEXAS	03-83	0	BIO		31,925	40,545
5	R01 GM27636-03 22400	SELTZER, STANLEY MECHANISM STUDIES OF ENZYMIC CIS-TRANS ISOMERIZATION	ASSOCIATED UNIV-BROOKHAVEN NATL LAB	UPTON	82 NEW YORK	09-83	0	BIO		36,815	58,904

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5	R01 GM27656-03 22300	MACDONALD, RUSSELL E COUPLING OF ENERGY TO THE TRANSPORT OF IONS & MOLECULES	CORNELL UNIVERSITY ITHACA	ITHACA NEW YORK	82	08-83	0	BIO 68,197	100,080
5	R01 GM27667-03 22400	ABELES, ROBERT H HMG-COA REDUCTASE--INHIBITION AND ACTION	BRANDEIS UNIVERSITY	WALTHAM MASSACHUSETTS	82	05-83	0	BIO 87,850	122,231
1	R01 GM27675-01A1 AM 11760	STEGGLES, ALAN W THE REGULATION OF CYTOCHROME P-450-LM2 MRNA SYNTHESIS	NORTHEASTERN OHIO UNIVERSITIES COLL MED	ROOTSTOWN OHIO	82	01-83	2	BIO 40,400	58,100
5	R01 GM27695-03 22400	FLEMING, PATRICK J ELECTRON TRANSPORT ENZYMES IN CATECHOLAMINE GRANULES	GEORGETOWN UNIVERSITY	WASHINGTON DIST OF COL	82	03-83	0	BIO 39,626	54,582
5	R01 GM27700-02 22400	AXELROD, BERNARD IDENTIFICATION OF PHOSPHATE-BINDING SITES IN PROTEINS	PURDUE UNIVERSITY WEST LAFAYETTE	WEST LAFAYETTE INDIANA	81	09-82	0	BIO 53,947	81,724
5	R01 GM27701-03 21200	CHIRIKJIAN, JACK G SITE SPECIFIC ENDONUCLEASE CATALYSIS OF DNA	GEORGETOWN UNIVERSITY	WASHINGTON DIST OF COL	82	03-83	2	BIO 44,471	63,207
5	R01 GM27742-03 22400	BREWER, JOHN M MECHANISM OF METAL ACTIVATION OF YEAST ENOLASE	UNIVERSITY OF GEORGIA	ATHENS GEORGIA	82	03-83	0	BIO 43,264	59,235
5	R01 GM27746-03 22400	KUNG, SHAIN-DOW RIBULASE-1,5 BISPHOSPHATE CARBOXYLASE IN VIVO	UNIVERSITY OF MARYLAND BALT CO CAMPUS	CATONSVILLE MARYLAND	82	03-83	0	BIO 36,577	56,430
5	R01 GM27785-03 21310	HODO, HENRY G, III RNA POLYMERASE 2--STRUCTURE & CHEMICAL MODIFICATION	MEHARRY MEDICAL COLLEGE	NASHVILLE TENNESSEE	82	07-83	0	BIO 38,356	49,728
5	R01 GM27792-02 21320	CHATTERJEE, NANDO K NUCLEAR PROTEIN SYNTHESIS IN EUKARYOTIC CELLS	NEW YORK STATE DEPARTMENT OF HEALTH	ALBANY NEW YORK	82	03-83	1	BIO 49,924	72,440
5	R01 GM27811-03 11880	VAN DER HOEVEN, THEODORE A ENDOCRINE CONTROL OF LIVER MICROSOMAL CYTOCHROME P-450	ALBANY MEDICAL COLLEGE	ALBANY NEW YORK	82	08-83	0	BIO 34,544	54,220
5	R01 GM27812-03 22450	HATEFI, YOUSSEF MITOCHONDRIAL NADH AND SUCCINATE DEHYDROGENASE	SCRIPPS CLINIC AND RESEARCH FOUNDATION	LA JOLLA CALIFORNIA	82	03-83	0	BIO 44,351	71,277

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5	R01 GM27836-03 11760	NOVAK, RAYMOND F MOLECULAR BASIS OF P450LM SUBSTRATE SPECIFICITY	NORTHWESTERN UNIVERSITY	CHICAGO ILLINOIS	82	03-83	0	BIO	52,544	69,281
5	R01 GM27840-03 22400	OGILVIE, JAMES W PHOSPHOFRUCTOKINASE: STRUCTURE-FUNCTION RELATIONSHIPS	UNIVERSITY OF VIRGINIA	CHARLOTTESVILLE CHARLOTTESVILLE VIRGINIA	82	09-83	0	BIO	30,867	44,757
5	R01 GM27857-03 22450	GUILLORY, RICHARD J MEMBRANE LINKED REACTIONS: COUPLING FACTOR ATPASE	UNIVERSITY OF HAWAII AT MANOA	HONOLULU HAWAII	82	03-83	1	BIO	47,364	65,510
5	R01 GM27920-03 22300	FORBUSH, BLISS, III SUBUNIT INTERACTIONS AND THE MECHANISM OF NA, K-ATPASE	YALE UNIVERSITY	NEW HAVEN CONNECTICUT	82	03-83	0	BIO	56,923	89,938
5	R01 GM27970-03 21310	MC GUIRE, PETER M CHARACTERIZATION OF PLACENTAL RNA POLYMERASE II	UNIVERSITY OF FLORIDA	GAINESVILLE FLORIDA	82	08-83	0	BIO	34,051	48,410
5	R01 GM27975-03 22400	SOUTHERLAND, WILLIAM M A STRUCTURAL AND ENZYMIC ANALYSIS OF SULFITE OXIDASES	HOWARD UNIVERSITY	WASHINGTON DIST OF COL	82	06-83	0	BIO	36,610	65,898
5	R01 GM27999-03 21320	MOLDAVE, KIVIE GENETIC REGULATION OF TRANSLATION IN YEAST	UNIVERSITY OF CALIFORNIA IRVINE	IRVINE CALIFORNIA	82	08-83	0	BIO	82,488	114,676
5	R01 GM28178-02 22400	CHEUNG, WAI YIU THE ROLE OF CALMODULIN IN PROSTAGLANDIN METABOLISM	ST. JUDE CHILDREN'S RESEARCH HOSPITAL	MEMPHIS TENNESSEE	82	08-83	1	BIO	57,807	79,791
5	R01 GM28236-03 11920	HILL, RICHARD K STEROCHEMICAL STUDIES OF BIOSYNTHETIC REACTIONS	UNIVERSITY OF GEORGIA	ATHENS GEORGIA	82	12-82	0	BIO	44,638	61,240
5	R01 GM28289-02 22300	KHORANA, HAR G SYNTHETIC AND BIOLOGICAL STUDIES OF NUCLEIC ACIDS	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	CAMBRIDGE MASSACHUSETTS	82	11-82	3	BIO	385,224	582,970
5	R01 GM28348-03 21600	LITMAN, GARY W UNIQUE HISTONE-LIKE CHROMOSOMAL PROTEIN	SLOAN-KETTERING INSTITUTE FOR CANCER RES	NEW YORK NEW YORK	82	06-83	0	BIO	45,369	68,970
5	R01 GM28368-03 22400	CRAVEN, PATRICIA A HEME-DEPENDENT ACTIVATION OF GUANYLATE CYCLASE	UNIVERSITY OF PITTSBURGH	PITTSBURGH PENNSYLVANIA	82	08-83	0	BIO	51,875	66,988

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5	R01 GM28373-03 22400	SMITH, THOMAS E KINETICS AND CHEMISTRY OF ALLOSTERIC INTERACTIONS	HOWARD UNIVERSITY	WASHINGTON DIST OF COL	82	03-83	3	BIO 63,407	112,733
5	R01 GM28540-02 22400	KAZARINOFF, MICHAEL H INTRACELLULAR DEGRADATION OF ENZYMES	CORNELL UNIVERSITY ITHACA	ITHACA NEW YORK	82	11-82	1	BIO 34,877	46,825
5	R01 GM28628-02 21750	KALLEN, ROLAND G NUCLEIC ACID SEQUENCES IN MULTIGENE FAMILIES	UNIVERSITY OF PENNSYLVANIA	PHILADELPHIA PENNSYLVANIA	82	12-82	1	BIO 53,406	86,950
5	R01 GM28675-02 21600	MARTINSON, HAROLD G NUCLEOSOME FUNCTION	UNIVERSITY OF CALIFORNIA LOS ANGELES	LOS ANGELES CALIFORNIA	82	11-82	3	BIO 39,593	51,867
5	R01 GM28677-02 21600	DE LANGE, ROBERT J NUCLEOSOMAL STRUCTURE, ASSEMBLY, AND FUNCTION	UNIVERSITY OF CALIFORNIA LOS ANGELES	LOS ANGELES CALIFORNIA	82	11-82	3	BIO 106,333	138,459
5	R01 GM28773-02 22400	COLLINS, KIM D DIHYDROOROTASE: CATALYSIS AND INHIBITION	JOHNS HOPKINS UNIVERSITY	BALTIMORE MARYLAND	82	01-83	1	BIO 48,308	71,962
5	R01 GM28775-02 21200	BROWN, NEAL C STRUCTURE AND FUNCTION OF ANIMAL CELL DNA POLYMERASE A	UNIVERSITY OF MASSACHUSETTS MEDICAL SCH	WORCESTER MASSACHUSETTS	82	06-83	3	BIO 99,704	177,473
5	R01 GM28894-03 22400	GRAFF, GUSTAV PLATELET FUNCTION CONTROL BY REGULATING PHOSPHOLIPASE C	UNIVERSITY OF ILLINOIS MEDICAL CENTER	CHICAGO ILLINOIS	82	07-83	0	BIO 47,384	74,867
1	R01 GM28994-01A1 22500	RAPOPORT, HENRY STRUCTURE OF PROTEIN-BOUND BILE PIGMENTS	UNIVERSITY OF CALIFORNIA BERKELEY	BERKELEY CALIFORNIA	82	04-83	4	BIO 84,530	110,734
5	R01 GM29001-02 21280	MARGOLIASH, EMANUEL CYTOCHROME C MECHANISMS BY RECOMBINANT DNA TECHNIQUES	NORTHWESTERN UNIVERSITY	EVANSTON ILLINOIS	82	03-83	1	BIO 88,914	121,569
5	R01 GM29124-02 21320	KEITH, JERRY M VIRAL /CELLULAR MRNA POST-TRANSCRIPTIONAL PROCESSING	NEW YORK UNIVERSITY	NEW YORK NEW YORK	82	03-83	1	BIO 49,720	75,077
5	R01 GM29139-02 22400	VILLAFRANCA, JOSEPH J MECHANISTIC STUDIES OF HYDROXYLASES	PENNSYLVANIA STATE UNIVERSITY UNIV PARK	UNIVERSITY PARK PENNSYLVANIA	82	03-83	1	BIO 78,237	105,574

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5	R01 GM29144-02 21100	WEITH, HERBERT L, III SYNTHESIS OF LONG POLYNUCLEOTIDES OF DEFINED SEQUENCE	PURDUE UNIVERSITY WEST LAFAYETTE	WEST LAFAYETTE INDIANA	82	04-83	1	BIO 54,290	74,806
5	R01 GM29162-02 21320	EICHLER, DUANE C NUCLEOLAR RIBONUCLEASES IN RIBOSOMAL RNA PROCESSING	UNIVERSITY OF SOUTH FLORIDA	TAMPA FLORIDA	82	03-83	1	BIO 38,916	58,763
1	R01 GM29165-01 21320	ERNST, VIVIAN G CONTROL OF TRANSLATION BY PROTEIN PHOSPHORYLATION	BRANDEIS UNIVERSITY	WALTHAM MASSACHUSETTS	82	08-83	2	BIO 59,612	86,182
2	R01 GM29200-02A1 21310	WILLIAMS, LUTHER S REGULATIONS OF AMINOACYL-TRNA SYNTHETASE FORMATION	WASHINGTON UNIVERSITY	SAINT LOUIS MISSOURI	82	03-83	4	BIO 86,117	123,719
5	R01 GM29221-10 21320	WEBB, THOMAS E POST-TRANSCRIPTIONAL CONTROL IN EUKARYOTIC CELLS	OHIO STATE UNIVERSITY	COLUMBUS OHIO	82	03-83	1	BIO 63,130	86,488
5	R01 GM29432-02 22400	RAIJMAN, LUISA J THE KINETIC PROPERTIES OF ENZYMES IN SITU	UNIVERSITY OF SOUTHERN CALIFORNIA	LOS ANGELES CALIFORNIA	82	07-83	1	BIO 42,448	64,150
1	R01 GM29433-01A1 HL 22400	EDMONDSON, DALE E COVALENT FLAVIN COENZYMES IN FLAVOENZYME CATALYSIS	EMORY UNIVERSITY	ATLANTA GEORGIA	82	06-83	4	BIO 1 108,066	145,307
5	R01 GM29500-27 22400	GOTS, JOSEPH S BIOSYNTHESIS AND INTERCONVERSION OF PURINE NUCLEOTIDES	UNIVERSITY OF PENNSYLVANIA	PHILADELPHIA PENNSYLVANIA	82	05-83	3	BIO 69,842	113,289
1	R01 GM29686-01 21200	HINKLE, DAVID C ENZYMATIC MECHANISM OF YEAST DNA REPLICATION	UNIVERSITY OF ROCHESTER	ROCHESTER NEW YORK	82	01-83	2	BIO 50,242	82,385
1	R01 GM29702-01 22400	WILSON, DWIGHT E, JR RNASE DETECTION SYSTEMS	RENSSELAER POLYTECHNIC INSTITUTE	TROY NEW YORK	82	12-82	0	BIO 6,000	9,600
1	R01 GM29756-01 AI 22200	REED, PETER W ROLE OF CALCIUM IN STIMULUS-ACTIVATION OF NEUTROPHILS	VANDERBILT UNIVERSITY	NASHVILLE TENNESSEE	82	05-83	2	BIO 46,010	71,085
1	R01 GM29780-01A1 21280	BREEN, GAIL A MAMMALIAN MUTANTS WITH DEFECTS IN COMPLEX I	UNIVERSITY OF TEXAS DALLAS	RICHARDSON TEXAS	82	07-83	2	BIO 1 75,520	93,202

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1	R01 GM29848-01 21600	DEININGER, PRESCOTT L HUMAN INTERSPERSED REPEATED DNA SEQUENCES	LOUISIANA STATE UNIV MED CTR NEW ORLEANS	NEW ORLEANS LOUISIANA	81	02-83	2	BIO		73,015	89,220
1	R01 GM30097-01 22400	WOODARD, RONALD W STEREOCHEMISTRY OF ACC SYNTHASE AND ACC DEAMINASE	UNIVERSITY OF MICHIGAN AT ANN ARBOR	ANN ARBOR MICHIGAN	82	01-83	2	BIO		53,096	79,104
3	R01 GM30324-01S1 22300	JOHNSON, GARY L REGULATORY PROTEINS OF ADENYLATE CYCLASE	UNIVERSITY OF MASSACHUSETTS MEDICAL SCH	WORCESTER MASSACHUSETTS	82	11-82	0	BIO	1	20,583	36,638
5	R01 GM30368-02 22400	AYLING, JUNE E OXYGEN ACTIVATION BY PHENYLALANINE HYDROXYLASE	UNIVERSITY OF SOUTH ALABAMA	MOBILE ALABAMA	82	06-83	2	BIO		75,758	104,059
5	R01 GM30380-02 22400	TAI, HSIN-HSIUNG ENZYMES IN PROSTAGLANDIN METABOLISM	UNIVERSITY OF KENTUCKY	LEXINGTON KENTUCKY	82	08-83	0	BIO		37,346	55,048
5	R01 GM30432-02 22400	BLAKLEY, RAYMOND ALLOSTERIC REGULATION OF MONOMERIC ENZYMES	ST. JUDE CHILDREN'S RESEARCH HOSPITAL	MEMPHIS TENNESSEE	82	08-83	1	BIO		68,901	95,566
1	R01 GM30554-01 22400	CHAU, VINCENT MECHANISM OF ENZYME REGULATION BY CALMODULIN	UNIVERSITY OF FLORIDA	GAINESVILLE FLORIDA	82	06-83	2	BIO	1	55,102	72,244
1	R01 GM30707-01 21750	HALVORSON, HARLYN O ORGANIZATION & REGULATION OF INVERTASE STRUCTURAL GENE	BRANDEIS UNIVERSITY	WALTHAM MASSACHUSETTS	82	04-83	2	BIO		68,676	110,635
7	R01 GM30721-01 22450	YU, CHANG-AN REACTION MECHANISMS OF MYOCARDIAL UBIQUINONE-PROTEINS	OKLAHOMA STATE UNIVERSITY STILLWATER	STILLWATER OKLAHOMA	81	02-83	0	BIO		90,341	116,022
1	R01 GM30884-01 22400	REINHART, GREGORY D MECHANISM OF ALLOSTERIC INFLUENCE ON ENZYME ACTIVITY	MAYO FOUNDATION	ROCHESTER MINNESOTA	82	07-83	2	BIO	1	48,992	62,519
1	R01 GM30885-01 22400	MATTHEWS, ROWENA G FOLYLPOLYGLUTAMATES AND FOLATE-DEPENDENT ENZYMES	UNIVERSITY OF MICHIGAN AT ANN ARBOR	ANN ARBOR MICHIGAN	82	06-83	2	BIO	1	32,700	48,621
1	R01 GM30953-01 22400	WATTERSON, DANIEL M CA2+ DEPENDENT PROTEIN PHOSPHORYLATION: MOLECULAR BASIS	VANDERBILT UNIVERSITY	NASHVILLE TENNESSEE	82	08-83	2	BIO		58,897	90,204

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1	R01 GM31076-01 21250	DEIBEL, MARTIN R, JR TERMINAL TRANSFERASE ENZYMATIC AND ACTIVE SITE STUDIES	UNIVERSITY OF KENTUCKY	LEXINGTON KENTUCKY	82	06-83	2	BIO 51,596	BIO 74,908
1	R01 GM31098-01 22200	NELSON, DAVID L CALMODULIN IN TRICHOCYST ASSEMBLY AND STRUCTURE	UNIVERSITY OF WISCONSIN MADISON	MADISON WISCONSIN	82	06-83	2	BIO 58,264	BIO 80,380
1	R01 GM31110-01 21400	GROSSMAN, LAWRENCE DNA REPAIR GENE EXPRESSION IN MAMMALIAN CELLS	JOHNS HOPKINS UNIVERSITY	BALTIMORE MARYLAND	82	06-83	4	BIO 89,795	BIO 134,363
1	R01 GM31186-01 22400	MARKHAM, GEORGE D ENZYMATIC MECHANISMS OF SULFUR-NUCLEOSIDE BIOSYNTHESIS	INSTITUTE FOR CANCER RESEARCH	PHILADELPHIA PENNSYLVANIA	82	06-83	2	BIO 55,284	BIO 78,214
1	R01 GM31193-01 22400	SOBERMAN, ROY J PURIFICATION AND CONTROL OF THE HUMAN 5-LIPOXYGENASE	ROBERT BRECK BRIGHAM HOSPITAL	BOSTON MASSACHUSETTS	82	06-83	2	BIO 42,190	BIO 59,855
1	R01 GM31225-01 21320	OKARMA, THOMAS B RNA PROCESSING BY THE EXTRACTABLE NUCLEAR ANTIGEN	STANFORD UNIVERSITY	STANFORD CALIFORNIA	82	06-83	2	BIO 71,322	BIO 112,689
7	R01 GM31305-01 22500	WOLD, FINN PROTEIN STRUCTURE AND FUNCTION	UNIVERSITY OF TEXAS HLTH SCI CTR HOUSTON	HOUSTON TEXAS	82	11-82	1	BIO 52,389	BIO 72,297
7	R01 GM31307-01 21750	ABELSON, JOHN N STRUCTURE AND FUNCTION OF RIBONUCLEIC ACIDS	AGOURON INSTITUTE	LA JOLLA CALIFORNIA	82	11-82	4	BIO 140,674	BIO 205,211
1	R01 GM31454-01 22400	TAI, HSIN-HSIUNG ENZYMES IN PROSTAGLANDIN METABOLISM	UNIVERSITY OF KENTUCKY	LEXINGTON KENTUCKY	82	04-83	1	BIO 24,860	BIO 34,555
7	R01 GM31672-01 22400	ADES, IBRAHIM Z BIOGENESIS OF CHICK LIVER AMINOLEVULINATE SYNTHETASE	UNIVERSITY OF MARYLAND COLLEGE PK CAMPUS	COLLEGE PARK MARYLAND	82	03-83	0	BIO 25,700	BIO 36,928
***	0	* CENTERS						0	0
***	225	NONCENTERS						14,458,344	20,958,440
***	225	TOTAL						14,458,344	20,958,440

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5	R01 GM16370-12 / 21800	PHAFF, H J / GENOME COMPARISON AS A BASIS FOR YEAST SYSTEMATICS	UNIVERSITY OF CALIFORNIA DAVIS	DAVIS / CALIFORNIA	82	11-82	0	BM / 64,682	84,485
***	0	* CENTERS						0	0
***	1	NONCENTERS						64,682	84,485
***	1	TOTAL						64,682	84,485
5	R01 GM08347-22 / 11920	SPENCE, JACK T / THE FUNCTION OF MOLYBDENUM IN BIOLOGICAL SYSTEMS	UTAH STATE UNIVERSITY	LOGAN / UTAH	82	04-83	1	BMT / 42,700	57,645
5	R01 GM08893-19 / 22500	KUSTIN, KENNETH / CHEMICAL KINETICS STUDIED BY RELAXATION SPECTROMETRY	BRANDEIS UNIVERSITY	WALTHAM / MASSACHUSETTS	82	03-83	1	BMT / 39,960	64,735
5	R01 GM10040-20 / 11920	BUSCH, DARYLE H / BIOMIMETIC METAL COMPLEXES OF MACROCYLIC LIGANDS	OHIO STATE UNIVERSITY	COLUMBUS / OHIO	82	06-83	0	BMT / 80,292	110,000
2	R01 GM10851-25 / 12820	GIDDINGS, J CALVIN / BIOMEDICAL SEPARATIONS: FIELD-FLOW FRACTIONATION	UNIVERSITY OF UTAH	SALT LAKE CITY / UTAH	82	01-83	4	BMT / 89,069	127,587
5	R01 GM11973-17 / 11760	FRYDMAN, BENJAMIN J / BIOSYNTHETIC INTERMEDIATES OF PORPHYRINS	UNIVERSITY OF BUENOS AIRES	BUENOS AIRES / ARGENTINA	82	08-83	1	BMT / 14,900	14,900
5	R01 GM12152-18 / 11920	MARGERUM, DALE W / METAL ION TRANSFER AND CATALYSIS IN PEPTIDE COMPLEXES	PURDUE UNIVERSITY WEST LAFAYETTE	WEST LAFAYETTE / INDIANA	82	11-82	2	BMT / 55,014	75,973
5	R01 GM13326-15 / 12820	PARDUE, HARRY L / INSTRUMENTATION FOR FAST CLINICAL ANALYSES	PURDUE UNIVERSITY WEST LAFAYETTE	WEST LAFAYETTE / INDIANA	82	11-82	0	BMT / 68,386	112,151

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5	R01 GM13638-17 11920	TAUBE, HENRY BIOCHEMICALLY SIGNIFICANT MOLECULES AS LIGANDS	STANFORD UNIVERSITY	STANFORD CALIFORNIA	82	03-83	1	BMT 73,364	115,915
5	R01 GM14276-18 22400	GIBSON, QUENTIN H KINETICS OF ENZYMES AND HEMOGLOBIN-LIGAND REACTIONS	CORNELL UNIVERSITY ITHACA	ITHACA NEW YORK	82	05-83	1	BMT 97,066	143,108
5	R01 GM14569-14 12820	HARRISON, WILLARD W BIOLOGICAL TRACE ANALYSIS BY HOLLOW CATHODE GLOW	UNIVERSITY OF VIRGINIA CHARLOTTESVILLE	CHARLOTTESVILLE VIRGINIA	81	07-83	0	BMT 43,455	80,175
5	R01 GM15373-13 11920	JENSEN, FREDERICK R DEMETALLATION, ALKYLATION AND BIOCHEMICAL PROCESSES	UNIVERSITY OF CALIFORNIA BERKELEY	BERKELEY CALIFORNIA	82	02-83	0	BMT 57,650	75,190
2	R01 GM16609-14 12840	MC LAFFERTY, FRED W MASS SPECTROMETRY IN BIOMEDICAL RESEARCH	CORNELL UNIVERSITY ITHACA	ITHACA NEW YORK	82	12-82	4	BMT 179,069	236,298
5	R01 GM18628-12 22400	TAKAHASHI, MARK T REGULATION OF THREONINE-SENSITIVE ASPARTOKINASE ACTIVITY	RUTGERS MEDICAL SCHOOL	PISCATAWAY NEW JERSEY	82	08-83	0	BMT 55,390	91,670
5	R01 GM19019-18 22500	BERSOHN, RICHARD BIFUNCTIONAL STUDIES OF PROTEINS	COLUMBIA UNIVERSITY	NEW YORK NEW YORK	81	10-82	0	BMT 48,699	73,376
5	R01 GM19478-07 12820	KARMEN, ARTHUR MICROANALYSIS USING GAS CHROMATOGRAPHY	YESHIVA UNIVERSITY	NEW YORK NEW YORK	81	11-82	0	BMT 56,104	102,633
2	R01 GM20194-10 22500	CHASTEEN, NORMAN D ANION DEPENDENT PROPERTIES OF TRANSFERRIN	UNIVERSITY OF NEW HAMPSHIRE	DURHAM NEW HAMPSHIRE	82	06-83	4	BMT 67,157	97,029
5	R01 GM20276-09 22500	DJERASSI, CARL MAGNETIC CIRCULAR DICHROISM--PORPHYRINS/HEME PROTEINS	STANFORD UNIVERSITY	STANFORD CALIFORNIA	82	06-83	0	BMT 57,270	90,487
5	R01 GM20877-08 11920	BALLOU, DAVID P RAPID KINETICS STUDY OF BIOLOGICAL OXYGENASES	UNIVERSITY OF MICHIGAN AT ANN ARBOR	ANN ARBOR MICHIGAN	82	08-83	3	BMT 79,021	121,953
5	R01 GM20985-09 11920	NEWKOME, GEORGE R PYRIDINE HETEROMACROCYCLES: FUTURE BIOLOGICAL MODELS	LOUISIANA STATE UNIV A&M COL BATON ROUGE	BATON ROUGE LOUISIANA	82	06-83	0	BMT 25,802	33,822

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5	R01 GM21337-08 22450	PALMER, GRAHAM A MOLECULAR MECHANISMS OF BIOLOGICAL REDOX REACTIONS	RICE UNIVERSITY	HOUSTON TEXAS	82	05-83	1	BMT 103,404	139,998
5	R01 GM21466-08 11920	HOLMES, ROBERT R PHOSPHATE MODEL FOR NUCLEASE ACTION	UNIVERSITY OF MASSACHUSETTS AMHERST	AMHERST MASSACHUSETTS	82	12-82	1	BMT 44,436	64,432
5	R01 GM21519-08 22400	FEE, JAMES A MECHANISMS OF SUPEROXIDE DISMUTASES	UNIVERSITY OF MICHIGAN AT ANN ARBOR	ANN ARBOR MICHIGAN	82	11-82	2	BMT 74,719	118,056
5	R01 GM21844-06 11920	TAYLOR, LARRY T STRUCTURE AND REACTIVITY OF MANGANESE-OXYGEN COMPLEXES	VIRGINIA POLYTECHNIC INST AND ST UNIV	BLACKSBURG VIRGINIA	81	03-83	0	BMT 31,994	45,751
5	R01 GM22311-07 12820	CHRISTIAN, GARY D CARCINOGEN DETECTION IN HUMANS BY VIDEO FLUOROMETRY	UNIVERSITY OF WASHINGTON	SEATTLE WASHINGTON	82	08-83	1	BMT 62,317	83,505
2	R01 GM22479-07 11940	VOLLHARDT, K PETER NOVEL ROUTES TO PHYSIOLOGICALLY ACTIVE COMPOUNDS	UNIVERSITY OF CALIFORNIA BERKELEY	BERKELEY CALIFORNIA	82	03-83	4	BMT 69,424	88,093
5	R01 GM22566-07 11920	ZUBIETA, JON A MOLYBDENUM & SULFUR COMPLEXES--MODELS FOR METALLOENZYMES	STATE UNIVERSITY OF NEW YORK AT ALBANY	ALBANY NEW YORK	82	06-83	0	BMT 34,056	49,177
5	R01 GM22761-06 11920	SAWYER, DONALD T THE CHEMISTRY OF BIOLOGICAL MANGANESE	UNIVERSITY OF CALIFORNIA RIVERSIDE	RIVERSIDE CALIFORNIA	82	11-82	0	BMT 47,996	62,410
2	R01 GM22764-07 22500	MC MILLIN, DAVID R COPPER PROTEINS: ASPECTS OF STRUCTURE AND DYNAMICS	PURDUE UNIVERSITY WEST LAFAYETTE	WEST LAFAYETTE INDIANA	82	08-83	2	BMT 81,890	103,540
5	R01 GM22787-06 11940	VOUROS, PAUL MASS SPECTROMETRY OF BIOLOGICALLY SIGNIFICANT COMPOUNDS	NORTHEASTERN UNIVERSITY	BOSTON MASSACHUSETTS	81	03-83	0	BMT 51,700	76,322
5	R01 GM22793-07 22500	KREILICK, ROBERT W STRUCTURAL STUDIES OF BIOLOGICAL METAL COMPLEXES	UNIVERSITY OF ROCHESTER	ROCHESTER NEW YORK	82	03-83	2	BMT 79,140	130,526
5	R01 GM23081-06 11870	LEGG, JOHN I BINDING OF SUBSTITUTION-INERT METAL IONS TO PROTEINS	WASHINGTON STATE UNIVERSITY	PULLMAN WASHINGTON	82	03-83	0	BMT 52,256	75,344

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5	R01 GM23270-06 11920	JONES, ALUN G CHEMISTRY OF TECHNETIUM RELATED TO NUCLEAR MEDICINE	HARVARD UNIVERSITY	BOSTON	MASSACHUSETTS	82	01-83	0	BMT		142,350	186,436
5	R01 GM23529-06 22400	VILLAFRANCA, JOSEPH J STRUCTURE AND CONTROL OF GLUTAMINE SYNTHETASES	PENNSYLVANIA STATE UNIVERSITY UNIV PARK	UNIVERSITY PARK	PENNSYLVANIA	82	12-82	2	BMT		62,587	84,218
2	R01 GM24031-06 12840	VESTAL, MARVIN L CROSSED-BEAM LC-MS FOR INVOLATILE BIOLOGICAL SAMPLES	UNIVERSITY OF HOUSTON AT HOUSTON	HOUSTON	TEXAS	82	11-82	2	BMT		86,874	102,181
5	R01 GM24053-03 11920	NEWKOME, GEORGE R SYNTHETIC MACROCYCLES AS ENZYMATIC REDOX MIMICS	LOUISIANA STATE UNIV A&M COL BATON ROUGE	BATON ROUGE	LOUISIANA	81	09-82	0	BMT		22,838	30,758
5	R01 GM24254-06 11910	LAROCK, RICHARD C SYNTHESIS OF BIOLOGICALLY ACTIVE HETEROCYCLES	IOWA STATE UNIVERSITY OF SCIENCE & TECH	AMES	IOWA	82	08-83	0	BMT		55,626	74,539
2	R01 GM24349-04 12820	NOVOTNY, MILOS V IMPROVE BIOCHEM HIGH-PERFORMANCE LIQUID CHROMATOGRAPHY	INDIANA UNIVERSITY BLOOMINGTON	BLOOMINGTON	INDIANA	82	11-82	2	BMT		68,525	88,0.2
2	R01 GM24480-04 11920	COFFMAN, ROBERT E ELECTRONIC AND MAGNETIC INTERACTIONS OF ADENOSYLCOBALAMI	UNIVERSITY OF IOWA	IOWA CITY	IOWA	82	08-83	2	BMT		54,810	73,253
5	R01 GM24488-03 22500	STAPLETON, HARVEY J ELECTRON SPIN RELAXATION AT ACTIVE SITES IN PROTEINS	UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN	URBANA	ILLINOIS	81	04-83	0	BMT		42,041	55,799
5	R01 GM24517-05 11940	MIDLAND, M MARK ASYMMETRIC REDUCTIONS VIA TRIALKYLBORANES	UNIVERSITY OF CALIFORNIA RIVERSIDE	RIVERSIDE	CALIFORNIA	82	12-82	1	BMT		63,000	82,530
5	R01 GM24989-05 22200	VALLEE, BERT L THE FUNCTION AND DETECTION OF ZINC IN CELL BIOLOGY	HARVARD UNIVERSITY	BOSTON	MASSACHUSETTS	82	05-83	0	BMT		108,583	168,304
5	R01 GM25052-05 22450	LEIGH, JOHN S, JR SPATIAL ORGANIZATION OF ELECTRON TRANSPORT SYSTEMS	UNIVERSITY OF PENNSYLVANIA	PHILADELPHIA	PENNSYLVANIA	82	03-83	3	BMT		117,614	187,702
5	R01 GM25122-05 11920	RAKOWSKI-DU BOIS, MARY C SYNTHESES AND STUDIES OF IRON-MOLYBDENUM COMPLEXES	UNIVERSITY OF COLORADO AT BOULDER	BOULDER	COLORADO	82	02-83	1	BMT		40,001	55,801

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5	R01 GM25172-05 11920	KADISH, KARL M REDOX REACTIONS OF IRON PORPHYRINS	UNIVERSITY OF HOUSTON AT HOUSTON	HOUSTON TEXAS	82	07-83	1	BMT 54,527	70,885
5	R01 GM25288-02 11920	CHUNG, SUNG-KEE PROBES OF NAD-DEPENDENT DEHYDROGENASE REACTION	TEXAS AGRI AND MECH UNIV	COLLEGE STATION COLLEGE STATION TEXAS	81	10-82	0	BMT 21,976	28,793
2	R01 GM25308-05 12820	RECHNITZ, GARRY A BIOANALYSIS WITH SELECTIVE MEMBRANE ELECTRODES	UNIVERSITY OF DELAWARE	NEWARK DELAWARE	82	06-83	4	BMT 53,219	84,086
5	R01 GM25312-03 12820	RECHNITZ, GARRY A BIO-SELECTIVE ELECTRODES USING LIVING BACTERIAL CELLS	UNIVERSITY OF DELAWARE	NEWARK DELAWARE	81	11-82	0	BMT 22,486	32,155
5	R01 GM25422-05 22400	QUE, LAWRENCE, JR NON-HEME IRON DIOXYGENASES: STRUCTURE AND MECHANISM	CORNELL UNIVERSITY ITHACA	ITHACA NEW YORK	82	06-83	3	BMT 75,150	106,799
5	R01 GM25459-05 11940	BERGMAN, ROBERT G C-N BOND FORMATION USING METAL-BASED REAGENTS	UNIVERSITY OF CALIFORNIA BERKELEY	BERKELEY CALIFORNIA	82	07-83	3	BMT 80,322	113,977
2	R01 GM25480-04 22450	BABCOCK, GERALD T BIOENERGETIC MECHANISMS IN MULTICENTER ENZYMES	MICHIGAN STATE UNIVERSITY	EAST LANSING MICHIGAN	82	03-83	2	BMT 66,796	91,722
5	R01 GM25592-03 12840	CAMPBELL, IAIN M RADIOGAS CHROMATOGRAPH/QUADRUPOLE MASS SPECTROMETY	UNIVERSITY OF PITTSBURGH	PITTSBURGH PENNSYLVANIA	81	12-82	0	BMT 49,701	75,546
5	R01 GM25727-03 11930	HALL, STAN S GLYOXALASE I INHIBITOR STUDIES AND ANTITUMOR AGENTS	RUTGERS THE STATE UNIV NEWARK	NEWARK NEW JERSEY	81	06-83	0	BMT 33,739	53,308
5	R01 GM25738-03 11860	GRAY, ROBERT D CARBON MONOXIDE BINDING TO CYTOCHROMES P-450 & P-448	UNIVERSITY OF LOUISVILLE	LOUISVILLE KENTUCKY	81	06-83	0	BMT 33,182	52,759
5	R01 GM25757-05 11920	BRYANT, ROBERT G ALKALINE EARTH ION NUCLEAR MAGNETIC RESONANCE	UNIVERSITY OF MINNESOTA OF MNPLS-ST PAUL	MINNEAPOLIS MINNESOTA	82	07-83	1	BMT 72,169	100,315
2	R01 GM25845-04 AM 11920	MILLER, MARVIN J SYNTHESIS OF FERRICHROMES AND RELATED IRON CHELATORS	UNIVERSITY OF NOTRE DAME	NOTRE DAME INDIANA	82	08-83	2	BMT 51,295	71,899

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5	R01 GM25877-04 22500	SUDMEIER, JAMES L STUDIES OF ZINC AND CALCIUM METALLOPROTEINS	UNIVERSITY OF CALIFORNIA	RIVERSIDE RIVERSIDE	82 CALIFORNIA	03-83	1	BMT 47,840	61,224
5	R01 GM25879-03 22450	XAVIER, ANTONIO V STRUCTURE AND FUNCTION OF PROTEINS IN SULFATE REDUCTION	UNIVERSITY OF MINNESOTA	OF MNPLS-ST PAUL MINNEAPOLIS	81 MINNESOTA	09-82	0	BMT 43,060	59,905
2	R01 GM25909-04 21310	MEARES, CLAUDE F PHOTOCHEMICAL & SPECTROSCOPIC PROBES OF RNA POLYMERASE	UNIVERSITY OF CALIFORNIA	DAVIS DAVIS	82 CALIFORNIA	11-82	4	BMT 57,566	71,563
5	R01 GM25981-04 11920	BRESLOW, RONALD C MODEL AND MECHANISM STUDIES ON ZINC ENZYMES	COLUMBIA UNIVERSITY	NEW YORK	82 NEW YORK	11-82	0	BMT 76,410	128,063
2	R01 GM26096-05 12840	MACFARLANE, RONALD D BIOMEDICAL USE OF PLASMA DESORPTION MASS SPECTROMETRY	TEXAS AGRI AND MECH UNIV	COLLEGE STATION COLLEGE STATION	82 TEXAS	06-83	2	BMT 122,245	145,748
2	R01 GM26178-04 11940	HEGEDUS, LOUIS S ORGANIMETALLIC SYNTHESES OF BIOACTIVE COMPOUNDS	COLORADO STATE UNIVERSITY	FORT COLLINS	82 COLORADO	03-83	2	BMT 57,472	76,324
2	R01 GM26226-04 11920	BALCH, ALAN L IRON PORPHYRIN ACTIVATION OF DIOXYGEN/SMALL MOLECULES	UNIVERSITY OF CALIFORNIA	DAVIS DAVIS	82 CALIFORNIA	03-83	4	BMT 76,874	95,745
5	R01 GM26294-03 11940	SCHORE, NEIL E SYNTHESIS OF BIOLOGICALLY ACTIVE CYCLOPENTENONES	UNIVERSITY OF CALIFORNIA	DAVIS DAVIS	81 CALIFORNIA	03-83	0	BMT 36,494	47,807
5	R01 GM26295-03 11920	ELLIS, PAUL D 113CD AND 77SE NMR OF SYSTEMS OF BIOLOGICAL INTEREST	UNIVERSITY OF SOUTH CAROLINA AT COLUMBIA	COLUMBIA	81 SOUTH CAROLINA	11-82	0	BMT 46,380	61,780
5	R01 GM26324-03 11840	ISIEN, STEPHAN S INERT METAL ION PROTECTING GROUPS IN PEPTIDE SYNTHESIS	RUTGERS THE STATE UNIV	NEW BRUNSWICK NEW BRUNSWICK	81 NEW JERSEY	09-82	0	BMT 38,829	59,020
5	R01 GM26390-03 11920	CLARKE, MICHAEL J STABLE HEAVY-METAL COMPLEXES OF NUCLEOTIDE AND COENZYME	BOSTON COLLEGE	CHESTNUT HILL	81 MASSACHUSETTS	07-83	0	BMT 27,460	39,943
2	R01 GM26486-04 11930	KOLHOUSE, JOHN F THE METABOLIC ROLE OF COBALAMIN AND FOLATE IN MAMMALS	UNIVERSITY OF COLORADO HLTH SCIENCES CTR	DENVER	82 COLORADO	06-83	4	BMT 71,435	86,745

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2	R01 GM26566-03A1 22500	EATON, GARETH R BROADENING REAGENTS FOR NITROXYL SPIN PROBES	UNIVERSITY OF DENVER	DENVER COLORADO	82	08-83	2	BMT	40,555	57,298
2	R01 GM26666-04 11440	DESIDERIO, DOMINIC M MASS SPECTROMETRY OF BIOLOGICALLY IMPORTANT PEPTIDES	UNIVERSITY OF TENN CENTER HEALTH SCIEN	MEMPHIS TENNESSEE	82	08-83	2	BMT	101,107	141,481
2	R01 GM26671-04 11920	COUCOUVANIS, DIMITRI N IRON AND MOLYBDENUM COMPLEXES: ENZYME ACTIVE SITES	UNIVERSITY OF IOWA	IOWA CITY IOWA	82	07-83	2	BMT	68,420	90,848
5	R01 GM26711-03 11930	EMERY, THOMAS F SYNTHESIS AND BIOASSAY OF SIDEROCHROME ANALOGS	UTAH STATE UNIVERSITY	LOGAN UTAH	82	02-83	0	BMT	35,645	48,121
5	R01 GM26730-03 22400	DAWSON, JOHN H SPECTROSCOPY AND MECHANISMS OF HEME IRON OXYGENASE	UNIVERSITY OF SOUTH CAROLINA AT COLUMBIA	COLUMBIA SOUTH CAROLINA	81	06-83	0	BMT	38,329	51,589
2	R01 GM26760-04 11940	NICHOLAS, KENNETH M SYNTHETIC UTILITY OF METAL-STABILIZED CARBENIUM IONS	BOSTON COLLEGE	CHESTNUT HILL MASSACHUSETTS	82	06-83	2	BMT	35,669	51,963
2	R01 GM26809-04 12820	ROY, RABINDRA N PH MEASUREMENT STANDARDS OF BLOOD IN ISOTONIC SALINE	DRURY COLLEGE	SPRINGFIELD MISSOURI	82	06-83	2	BMT	11,040	15,317
5	R01 GM26935-04 12820	ANDERSEN, NIELS H ASSAY METHODS FOR ARACHIDONIC ACID METABOLITES	UNIVERSITY OF WASHINGTON	SEATTLE WASHINGTON	82	06-83	0	BMT	60,092	80,523
5	R01 GM27065-03 22450	STREKAS, THOMAS C REDOX EFFECTS OF AXIAL LIGAND BONDING IN CYTOCHROMES	QUEENS COLLEGE	NEW YORK NEW YORK	82	11-82	0	BMT	39,933	65,410
2	R01 GM27109-03 11930	MATTESON, DONALD S AMINO BORONIC ACIDS	WASHINGTON STATE UNIVERSITY	PULLMAN WASHINGTON	82	08-83	2	BMT	29,932	42,951
5	R01 GM27179-02 11920	LAVALLEE, DAVID K MODELS FOR STUDY OF METALLOPROTEIN REDOX MECHANISMS	HUNTER COLLEGE	NEW YORK NEW YORK	82	05-83	1	BMT	30,766	49,810
5	R01 GM27208-02 22450	HAWKRIDGE, FRED M ELECTRON TRANSFER AT SURFACE ELECTRODES	VIRGINIA COMMONWEALTH UNIVERSITY	RICHMOND VIRGINIA	81	02-83	0	BMT	23,973	36,918

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5	R01 GM27276-03 22400	VAN WART, HAROLD E METALLOENZYME DYNAMICS AND MECHANISM	FLORIDA STATE UNIVERSITY	TALLAHASSEE FLORIDA	82	12-82	0	BMT 33,600	48,552
5	R01 GM27328-03 11910	GODLESKI, STEPHEN A SYNTHESIS OF SPIROCYCLIC NATURAL PRODUCTS	UNIVERSITY OF ROCHESTER	ROCHESTER NEW YORK	82	11-82	0	BMT 34,997	60,895
5	R01 GM27382-03 22450	SWEENEY, WILLIAM V IRON-SULFUR PROTEINS	HUNTER COLLEGE	NEW YORK NEW YORK	82	11-82	0	BMT 30,636	49,600
5	R01 GM27498-03 22450	VAN DUYNE, RICHARD P A NEW PROBE TECHNIQUE FOR THE STUDY OF PHOTOSYNTHESIS	NORTHWESTERN UNIVERSITY	EVANSTON ILLINOIS	82	11-82	0	BMT 51,946	61,952
5	R01 GM27721-02 22500	AMMA, ELMER L 113CD NMR AND CRYSTALLOGRAPHY OF ZN2+, CA2+ ENZYMES	UNIVERSITY OF SOUTH CAROLINA AT COLUMBIA	COLUMBIA SOUTH CAROLINA	82	01-83	1	BMT 41,320	52,606
5	R01 GM27939-03 22400	VAN WART, HAROLD E METALLOENZYMES AND CONNECTIVE TISSUE METABOLISM	FLORIDA STATE UNIVERSITY	TALLAHASSEE FLORIDA	82	03-83	0	BMT 44,010	63,594
2	R01 GM27947-03 11940	NEGISHI, EI-ICHI OLEFINS AND CHIRAL ALIPHATICS VIA ORGANOMETALLICS	PURDUE UNIVERSITY WEST LAFAYETTE	WEST LAFAYETTE INDIANA	82	08-83	2	BMT 56,578	78,119
5	R01 GM28063-03 11920	MUSKER, W KENNETH INTRAMOLECULAR EFFECTS ON ELECTRON TRANSFER PROCESSES	UNIVERSITY OF CALIFORNIA DAVIS	DAVIS CALIFORNIA	82	06-83	0	BMT 42,262	57,814
5	R01 GM28123-03 11920	RABAN, MORTON CHEMICAL MODELS FOR ACTIVE TRANSPORT OF ALKALI METALS	WAYNE STATE UNIVERSITY	DETROIT MICHIGAN	82	06-83	0	BMT 27,464	42,013
5	R01 GM28375-02 11920	SORRELL, THOMAS N MODELS FOR MOLYBDENUM ENZYMES	UNIVERSITY OF NORTH CAROLINA CHAPEL HILL	CHAPEL HILL NORTH CAROLINA	82	01-83	1	BMT 33,248	46,177
5	R01 GM28384-02 11940	SHARPLESS, K BARRY ASYMMETRIC OXIDATION OF ORGANIC COMPOUNDS	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	CAMBRIDGE MASSACHUSETTS	82	12-82	2	BMT 83,633	129,835
1	R01 GM28451-01A1 11920	WILSON, LON J MAGNETIC AND MODELING STUDIES OF CYTOCHROME OXIDASE	RICE UNIVERSITY	HOUSTON TEXAS	82	07-83	2	BMT 66,138	83,784

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5	R01 GM28636-02 11920	AVERILL, BRUCE A SYNTHETIC AND PHYSICAL APPROACHES TO METALLOPROTEINS	MICHIGAN STATE UNIVERSITY	EAST LANSING	MICHIGAN	82	12-82	1	BMT	45,881	63,872
1	R01 GM28659-01A1 21100	TOPICH, JOSEPH A STRUCTURE-REACTIVITY CORRELATIONS FOR MO COMPLEXES	VIRGINIA COMMONWEALTH UNIVERSITY	RICHMOND	VIRGINIA	82	08-83	2	BMT	36,231	47,664
5	R01 GM28792-05 11930	FALLER, JOHN W METAL CHELATE PROBES OF DNA-DRUG INTERACTIONS	YALE UNIVERSITY	NEW HAVEN	CONNECTICUT	82	03-83	0	BMT	36,306	57,363
5	R01 GM28796-08 22450	WILKINS, RALPH C KINETIC STUDIES OF HEMERYTHRIN REACTIONS	NEW MEXICO STATE UNIVERSITY LAS CRUCES	LAS CRUCES	NEW MEXICO	82	04-83	3	BMT	47,508	69,262
5	R01 GM28828-06 11770	MASAMUNE, SATORU CHELATION-ANTIBIOTICS/TREATMENT OF IRON OVERLOAD	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	CAMBRIDGE	MASSACHUSETTS	82	07-83	0	BMT	28,147	35,628
5	R01 GM28831-03 22400	GOFF, HAROLD M HIGH OXIDATION STATE IRON PORPHYRINS	UNIVERSITY OF IOWA	IOWA CITY	IOWA	82	07-83	0	BMT	31,272	43,155
5	R01 GM28834-03 22400	MAUK, ARTHUR G CYTOCHROME B5-HEMOGLOBIN REDOX COUPLE	UNIVERSITY OF BRITISH COLUMBIA	VANCOUVER	CANADA	82	08-83	0	BMT	29,260	29,260
5	R01 GM28856-03 11920	HOLM, RICHARD H BIOLOGICALLY RELATED IRON-SULFUR CHEMISTRY	HARVARD UNIVERSITY	CAMBRIDGE	MASSACHUSETTS	82	06-83	3	BMT	120,467	184,709
5	R01 GM28882-02 12400	MEYERHOFF, MARK E POLYMER MEMBRANE BASED POTENTIOMETRIC GAS SENSORS	UNIVERSITY OF MICHIGAN AT ANN ARBOR	ANN ARBOR	MICHIGAN	82	03-83	1	BMT	38,145	57,833
5	R01 GM28938-02 11940	BROOKHART, MAURICE S DEVELOPMENT AND USE OF MANGANESE IN ORGANIC SYNTHESIS	UNIVERSITY OF NORTH CAROLINA CHAPEL HILL	CHAPEL HILL	NORTH CAROLINA	82	06-83	1	BMT	65,172	86,888
5	R01 GM28962-02 11920	KARLIN, KENNETH D NEW COPPER(I) CHEMISTRY-MODELS FOR METALLOPROTEINS	STATE UNIVERSITY OF NEW YORK AT ALBANY	ALBANY	NEW YORK	82	03-83	1	BMT	40,339	57,368
1	R01 GM29041-01A1 22500	TSAI, MING-DAW 17 O AND 31P NMR OF BIOPHOSPHATES	OHIO STATE UNIVERSITY	COLUMBUS	OHIO	82	07-83	2	BMT	49,597	67,282

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5	R01 GM29225-02 11920	MARZILLI, LUIGI G METAL COMPLEXES AS MUTIFUNCTIONAL CATALYSTS	EMORY UNIVERSITY	ATLANTA GEORGIA	81	03-83	0	BMT 42,033	63,397
5	R01 GM29276-06 12840	ZARE, RICHARD N APPLICATIONS OF LASER FLUORIMETRY TO BIOMEDICAL ANALYSIS	STANFORD UNIVERSITY	STANFORD CALIFORNIA	82	06-83	1	BMT 63,730	92,782
1	R01 GM30240-01 12840	COTTON, THERESE M SURFACE ENHANCED RAMAN STUDIES OF BIOMOLECULES	ILLINOIS INSTITUTE OF TECHNOLOGY	CHICAGO ILLINOIS	82	01-83	2	BMT 122,340	136,028
7	R01 GM30352-01 11920	HOGGARD, PATRICK E LUMINESCENCE OF AMINO ACID AND PEPTIDE COMPLEXES	UNIVERSITY OF NORTH DAKOTA	GRAND FORKS NORTH DAKOTA	81	09-82	0	BMT 33,551	41,504
1	R01 GM30482-01 22400	WINGE, DENNIS R METAL CHELATION IN METALLOTHIONEIN	UNIVERSITY OF UTAH	SALT LAKE CITY UTAH	82	04-83	2	BMT 86,816	119,466
1	R13 GM30753-01 GM 11920	ZUBIETA, JON A CONFERENCE ON COPPER COORDINATION CHEMISTRY	STATE UNIVERSITY OF NEW YORK AT ALBANY	ALBANY NEW YORK	82	03-83	0	BMT 2,000	2,000
1	R01 GM30904-01 22500	SIIMAN, OLAVI SURFACE-ENHANCED RAMAN SCATTERING	CLARKSON COLLEGE OF TECHNOLOGY	POTSDAM NEW YORK	82	06-83	2	BMT 35,894	51,780
1	R01 GM31013-01 11940	MOLANDER, GARY A STEREOSPECIFIC SYNTHESES VIA ALLYLMETALLATION REACTIONS	UNIVERSITY OF COLORADO AT BOULDER	BOULDER COLORADO	82	07-83	2	BMT 50,267	66,441
1	R01 GM31213-01 21200	BARTON, JACQUELINE K ROLE OF ZINC IN A DNA ENZYME	HUNTER COLLEGE	NEW YORK NEW YORK	82	06-83	2	BMT 72,484	95,669
7	R01 GM31280-01 11940	GLADYSZ, JOHN A ASYMMETRIC SYNTHESIS USING CHIRAL RHENIUM COMPLEXES	UNIVERSITY OF UTAH	SALT LAKE CITY UTAH	82	06-83	0	BMT 28,432	39,066

***	0	* CENTERS	0	0
***	113	NONCENTERS	6,312,341	8,863,092
***	113	TOTAL	6,312,341	8,863,092

T	GRANT NUMBER / PROGRAM (FINE CODE)	INVESTIGATOR / PROJECT TITLE	GRANTEE INSTITUTION	CITY / STATE	FY	END-DATE	FUT-YRS AVAILABLE	IRG SUB DOLLARS DIRECT	TOTAL
2	R01 GM06840-24 11910	DJERASSI, CARL MARINE CHEMISTRY WITH SPECIAL EMPHASIS ON STEROIDS	STANFORD UNIVERSITY	STANFORD CALIFORNIA	82	04-83	4	BNP 195,682	300,478
2	R01 GM09686-21 11910	BUCHI, GEORGE H THE CHEMISTRY OF NATURAL PRODUCTS	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	CAMBRIDGE MASSACHUSETTS	82	03-83	4	BNP 160,290	235,634
2	R01 GM10265-20 11930	LETSINGER, ROBERT L SYNTHETIC POLYNUCLEOTIDES AS SITE SPECIFIC REAGENTS	NORTHWESTERN UNIVERSITY	EVANSTON ILLINOIS	82	06-83	3	BNP 81,754	110,693
2	R01 GM12848-17 11910	HARRIS, THOMAS M TETRACYCLINES AND RELATED PHENOLIC NATURAL PRODUCTS	VANDERBILT UNIVERSITY	NASHVILLE TENNESSEE	82	12-82	3	BNP 57,316	87,463
3	R01 GM13246-25S1 11910	LEETE, EDWARD METABOLISM OF NATURAL PRODUCTS OF MEDICINAL INTEREST	UNIVERSITY OF MINNESOTA OF MNPLS-ST PAUL	MINNEAPOLIS MINNESOTA	82	12-82	0	BNP 27,000	27,000
2	R01 GM13435-16A1 21310	ORGEL, LESLIE E EVOLUTION OF GENETIC SPECIFICITY	SALK INSTITUTE FOR BIOLOGICAL STUDIES	LA JOLLA CALIFORNIA	82	06-83	2	BNP 78,370	118,186
2	R01 GM13453-17 11440	KEMP, DANIEL S SYNTHESIS AND REACTIONS OF PEPTIDES	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	CAMBRIDGE MASSACHUSETTS	82	06-83	4	BNP 140,188	188,504
2	R01 GM19906-06 11920	DOWD, PAUL SYNTHESIS OF VITAMIN B12 MODELS	UNIVERSITY OF PITTSBURGH	PITTSBURGH PENNSYLVANIA	82	11-82	2	BNP 58,530	88,446
2	R01 GM21249-06A1 11910	SALOMON, ROBERT G PREPROSTAGLANDIN ENDOPEROXIDES	CASE WESTERN RESERVE UNIVERSITY	CLEVELAND OHIO	82	03-83	2	BNP 139,424	179,267
5	R01 GM21328-08 11920	POULTER, C DALE SUBSTRATE ANALOGS FOR TERPENE CONDENSATION REACTIONS	UNIVERSITY OF UTAH	SALT LAKE CITY UTAH	82	05-83	3	BNP 104,888	150,738
2	R01 GM21450-07 22400	WHITE, EMIL H ENZYME ACTIVE SITE MAPPING UTILIZING CARBONIUM IONS	JOHNS HOPKINS UNIVERSITY	BALTIMORE MARYLAND	82	11-82	2	BNP 76,902	112,958
5	R01 GM21747-08 21100	WRIGHT, GEORGE E DESIGN OF SELECTIVE INHIBITORS OF DNA POLYMERASES	UNIVERSITY OF MASSACHUSETTS MEDICAL SCH	WORCESTER MASSACHUSETTS	82	12-82	1	BNP 70,383	118,251

T	GRANT NUMBER / PROGRAM (FINE CODE)	INVESTIGATOR / PROJECT TITLE	GRANTEE INSTITUTION	CITY / STATE	FY	END-DATE	FUT-YRS AVAILABLE	IRG SUB DOLLARS DIRECT	TOTAL
5	R01 GM22172-08 11910	CANE, DAVID E BIOSYNTHESIS OF ANTIBIOTIC NATURAL PRODUCTS	BROWN UNIVERSITY	PROVIDENCE RHODE ISLAND	82	07-83	0	BNP 66,700	109,405
2	R01 GM22988-07 11770	GRUNEWALD, GARY L CONFORMATIONALLY DEFINED ADRENERGIC AMINES	UNIVERSITY OF KANSAS LAWRENCE	LAWRENCE KANSAS	82	06-83	2	BNP 44,612	60,235
5	R01 GM24054-05 11910	GANEM, BRUCE SYNTHESIS AND BIOSYNTHESIS IN THE SHIKIMATE PATHWAY	CORNELL UNIVERSITY ITHACA	ITHACA NEW YORK	82	12-82	1	BNP 71,020	104,089
2	R01 GM24420-04 11920	ABERHART, DONALD J STUDIES ON ENZYME STEREOCHEMISTRY	WORCESTER FDN FOR EXPER BIOLOGY	SHREWSBURY MASSACHUSETTS	82	11-82	3	BNP 77,832	125,068
2	R01 GM24425-04 11910	SHIMIZU, YUZURU BIOSYNTHESIS OF MARINE NATURAL PRODUCTS	UNIVERSITY OF RHODE ISLAND	KINGSTON RHODE ISLAND	82	06-83	2	BNP 55,591	75,048
2	R01 GM25521-04 11910	POULTER, C DALE STUDIES OF STEROL BIOSYNTHESIS	UNIVERSITY OF UTAH	SALT LAKE CITY UTAH	82	03-83	2	BNP 70,798	99,417
2	R01 GM25680-04 21750	CARUTHERS, MARVIN H CHEMICAL AND ENZYMATIC STUDIES ON GENE CONTROL REGIONS	UNIVERSITY OF COLORADO AT BOULDER	BOULDER COLORADO	82	11-82	4	BNP 71,495	97,411
2	R01 GM25912-04 11920	REBEK, JULIUS, JR STUDIES IN CATALYSIS AND MECHANISM	UNIVERSITY OF PITTSBURGH	PITTSBURGH PENNSYLVANIA	82	11-82	2	BNP 64,082	92,205
2	R01 GM25996-04 11910	GOULD, STEVEN J BIOSYNTHETIC STUDIES USING 15N-13C CNMR SPECTROSCOPY	UNIVERSITY OF CONNECTICUT STORRS	STORRS CONNECTICUT	82	11-82	2	BNP 62,317	94,395
2	R01 GM26166-04 11920	PARRY, RONALD J METABOLISM OF CHIRALLY LABELED ADENOSINE	RICE UNIVERSITY	HOUSTON TEXAS	82	11-82	2	BNP 41,082	55,431
2	R01 GM26388-04 11920	BERCHTOLD, GLENN A ARENE OXIDES: IMPORTANCE IN BIOLOGICAL REACTIONS	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	CAMBRIDGE MASSACHUSETTS	82	06-83	2	BNP 76,799	107,890
5	R01 GM26569-04 11910	PARRY, RONALD J BIOSYNTHESIS OF CYCLOPENTANOIDS	RICE UNIVERSITY	HOUSTON TEXAS	82	11-82	1	BNP 40,081	54,911

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2	R01 GM26867-04 11930	MILLER, MARVIN J SYNTHESIS OF BETA-LACTAMS FROM HYDROXAMIC ACIDS	UNIVERSITY OF NOTRE DAME	NOTRE DAME INDIANA	82	06-83	2	BNP 86,048	120,723
5	R01 GM26870-03 21100	CHAPMAN, TOBY M GRAFT POLYMERS AS SUPPORTS FOR NUCLEIC ACID SYNTHESIS	UNIVERSITY OF PITTSBURGH	PITTSBURGH PENNSYLVANIA	82	06-83	0	BNP 39,316	57,959
5	R01 GM28663-02 11910	FUNK, RAYMOND L NEW CYCLIZATION METHODS FOR NATURAL PRODUCT SYNTHESIS	UNIVERSITY OF NEBRASKA LINCOLN	LINCOLN NEBRASKA	82	11-82	2	BNP 48,760	66,795
5	R01 GM28849-02 11910	HEATHCOCK, CLAYTON H STEREOSELECTIVE SYNTHESIS OF POLYETHER IONOPHORES	UNIVERSITY OF CALIFORNIA BERKELEY	BERKELEY CALIFORNIA	82	02-83	2	BNP 64,137	84,019
5	R01 GM28990-02 11920	GOULD, STEVEN J STUDIES OF ENZYME REACTION MECHANISMS	UNIVERSITY OF CONNECTICUT STORRS	STORRS CONNECTICUT	82	03-83	1	BNP 33,798	50,561
5	R01 GM29[illegible]-02 11220	GANDOUR, RICHARD D CHEMICAL MODELS OF ENZYMATIC CATALYSIS	LOUISIANA STATE UNIV A&M COL BATON ROUGE	BATON ROUGE LOUISIANA	82	03-83	1	BNP 42,590	56,645
2	R01 GM29290-02 11940	BOECKMAN, ROBERT K, JR METHODOLOGY FOR THE CONSTRUCTION OF COMPLEX MOLECULES	UNIVERSITY OF ROCHESTER	ROCHESTER NEW YORK	82	11-82	3	BNP 78,661	132,726
5	R01 GM29468-09 11910	ZIEGLER, FREDERICK E SYNTHETIC STUDIES OF CYTOTOXIC NATURAL PRODUCTS	YALE UNIVERSITY	NEW HAVEN CONNECTICUT	82	08-83	2	BNP 90,566	152,151
5	R01 GM29497-02 11430	RICH, DANIEL H INHIBITORS OF AMINOPEPTIDASES	UNIVERSITY OF WISCONSIN MADISON	MADISON WISCONSIN	82	08-83	2	BNP 66,700	94,137
5	R01 GM29784-14 11910	FLOSS, HEINZ G BIOSYNTHESIS OF ERGOT ALKALOIDS	PURDUE UNIVERSITY WEST LAFAYETTE	WEST LAFAYETTE INDIANA	82	08-83	1	BNP 74,229	103,921
1	R01 GM29815-01A1 HL 11910	HEATHCOCK, CLAYTON H TOTAL SYNTHESIS OF COMPACTIN AND MEVINOLIN	UNIVERSITY OF CALIFORNIA BERKELEY	BERKELEY CALIFORNIA	82	08-83	2	BNP 60,345	83,828
1	R01 GM30079-01 11920	JOHNSON, RICHARD W ENZYME MODELS BASED ON ANTIBODY-HAPTEN COMPLEXES	HARVARD UNIVERSITY	CAMBRIDGE MASSACHUSETTS	82	01-83	2	BNP 16,735	25,772

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1	R01 GM30345-01 CA 11910	BOECKMAN, ROBERT K, JR SYNTHESIS OF MEDIUM RING ANTITUMOR SUBSTANCES	UNIVERSITY OF ROCHESTER	ROCHESTER NEW YORK	82	08-83	3	BNP	43,555	72,826
1	R01 GM30367-01 11940	WHITESIDES, GEORGE M ENZYMES AS CATALYSTS IN ORGANIC SYNTHESIS	HARVARD UNIVERSITY	CAMBRIDGE MASSACHUSETTS	82	03-83	3	BNP	152,975	218,501
1	R01 GM31124-01 11940	SHARPLESS, K BARRY SYNTHESIS OF SACCHARIDES AND PALYTOXIN	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	CAMBRIDGE MASSACHUSETTS	82	07-83	2	BNP	93,070	132,761
7	R01 GM31600-01 11910	SCOTT, A IAN ANTITUMOR ALKALOIDS BIOSYNTHESIS AND BIOGENETIC SYNTHESI	TEXAS AGRI AND MECH UNIV	COLLEGE STATION COLLEGE STATION TEXAS	82	03-83	3	BNP	49,328	63,358
***	0	* CENTERS							0	0
***	40	NONCENTERS							2,973,949	4,309,746
***	40	TOTAL							2,973,949	4,309,746
5	R01 GM29254-02 13700	FROMMER, GABRIEL P SOMATOSENSORY FUNCTION DURING ANALGESIA	INDIANA UNIVERSITY BLOOMINGTON	BLOOMINGTON INDIANA	81	01-83	0	BPNB	19,581	26,597
***	0	* CENTERS							0	0
***	1	NONCENTERS							19,581	26,597
***	1	TOTAL							19,581	26,597

TABLE-3 RESEARCH GRANTS ACTIVE AS OF 09-30-82 BY INITIAL REVIEW GROUP

T	GRANT NUMBER / PROGRAM (FINE CODE)	INVESTIGATOR / PROJECT TITLE	GRANTEE INSTITUTION	CITY / STATE	FY	END-DATE	FUT-YRS AVAILABLE	IRG	SUB	DOLLARS DIRECT	DOLLARS TOTAL
5	R01 GM27739-03 13700	MISELIS, RICHARD R BEHAVIORAL NEURAL SUBSTRATE MEDIATING WATER BALANCE	UNIVERSITY OF PENNSYLVANIA	PHILADELPHIA PENNSYLVANIA	82	08-83	0	BPO		32,067	52,911
5	R01 GM28265-03 13700	SULZMAN, FRANK M LIGHT-DARK ENTRAINMENT OF CIRCADIAN RHYTHMS	STATE UNIVERSITY NEW YORK BINGHAMTON	BINGHAMTON NEW YORK	82	06-83	0	BPO		34,066	48,637
5	R01 GM28803-03 13700	PITTENDRIGH, COLIN S CIRCADIAN RHYTHMS: PROPERTIES OF A COMPLEX PACEMAKER	STANFORD UNIVERSITY	STANFORD CALIFORNIA	82	06-83	0	BPO		57,015	90,084
5	R01 GM28804-03 13700	WALCOTT, BENJAMIN NEURAL BASIS OF MAGNETIC FIELD DETECTION	STATE UNIVERSITY NEW YORK STONY BROOK	STONY BROOK NEW YORK	82	06-83	0	BPO		37,034	55,240
5	R01 GM28874-02 13700	BLIZARD, DAVID A GENETICS, REACTIVITY TO STRESS AND BIOGENIC AMINES	WAKE FOREST UNIVERSITY	WINSTON-SALEM NORTH CAROLINA	81	06-83	0	BPO		75,286	100,356
1	R01 GM30039-01 NS 13700	PAGE, TERRY L PHYSIOLOGICAL BASIS OF CIRCADIAN ORGANIZATION	VANDERBILT UNIVERSITY	NASHVILLE TENNESSEE	82	11-82	2	BPO		29,927	43,240
1	R01 GM30544-01 AI 13700	VAN DYKE, CRAIG BEHAVIORAL CONDITIONING IN AUTOIMMUNE DISEASES	UNIVERSITY OF CALIFORNIA SAN FRANCISCO	SAN FRANCISCO CALIFORNIA	82	07-83	2	BPO		37,025	44,754
5	R01 GM30777-02 13700	WOLF, GEORGE BRAIN LESIONS AND SALT APPETITE: A NEUROBEHAVIORAL SYSTE	NEW YORK UNIVERSITY	NEW YORK NEW YORK	82	04-83	1	BPO		48,628	71,729
1	R01 GM31199-01 NS 13700	ALBERS, H ELLIOTT NEURAL AND HORMONAL CONTROL OF CIRCADIAN BEHAVIORS	WORCESTER FDN FOR EXPER BIOLOGY	SHREWSBURY MASSACHUSETTS	82	07-83	2	BPO		44,256	64,029
***	0 * CENTERS									0	0
***	9 NONCENTERS									395,304	570,980
***	9 TOTAL									395,304	570,980

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5	R01 GM10138-20 22200	GREGG, JAMES H CELL. SLIME MOLD INTERACTION/REGULATION/DIFFERENTIATION	UNIVERSITY OF FLORIDA	GAINESVILLE	FLORIDA	82	12-82	0	CBY		49,250	71,117
5	R01 GM10422-20 12930	SALPETER, MIRIAM M HIGH RESOLUTION AUTORADIOGRAPHY	CORNELL UNIVERSITY ITHACA	ITHACA	NEW YORK	82	11-82	1	CBY		84,520	132,884
5	R01 GM13745-17 22250	NICKLAS, R BRUCE ANALYSIS AND CONTROL OF CHROMOSOME MOVEMENT	DUKE UNIVERSITY	DURHAM	NORTH CAROLINA	82	12-82	3	CBY		54,119	81,179
5	R01 GM14237-15 12930	SLAYTER, HENRY S ELECTRON MICROSCOPY OF MACROMOLECULAR STRUCTURES	SIDNEY FARBER CANCER INSTITUTE	BOSTON	MASSACHUSETTS	82	03-83	1	CBY		55,679	92,224
5	R01 GM14363-17 22250	KANE, ROBERT E CELL PROTEINS IN DIVISION AND EARLY DEVELOPMENT	UNIVERSITY OF HAWAII AT MANOA	HONOLULU	HAWAII	82	08-83	3	CBY		38,421	53,825
5	R01 GM17995-10 21600	KEDES, LAURENCE H EMBRYONIC CHROMOSOMAL PROTEINS AND THEIR RNA TEMPLATES	STANFORD UNIVERSITY	STANFORD	CALIFORNIA	82	04-83	1	CBY		74,217	107,615
5	R01 GM18711-11 22250	BROKAW, CHARLES J MECHANISMS OF MOVEMENT OF SIMPLE SPERM FLAGELLA	CALIFORNIA INSTITUTE OF TECHNOLOGY	PASADENA	CALIFORNIA	82	07-83	0	CBY		70,984	104,336
5	R01 GM19272-08 22250	WALTERS, MARTA S MEIOSIS: A REVISED SEQUENCE OF EVENTS IN PROPHASE	SANTA BARBARA BOTANIC GARDEN	SANTA BARBARA	CALIFORNIA	81	09-82	0	CBY		34,020	48,989
5	R01 GM19536-10 22200	HASTINGS, JOHN W MOLECULAR AND CELLULAR MECHANISMS OF BIOLOGICAL RHYTHMS	HARVARD UNIVERSITY	CAMBRIDGE	MASSACHUSETTS	82	11-82	0	CBY		57,715	85,641
2	R01 GM20024-09 HD 22200	FREEMAN, GARY L THE BASIS FOR AND ROLE OF SYMMETRY DURING EMBRYOGENESIS	UNIVERSITY OF TEXAS AUSTIN	AUSTIN	TEXAS	82	06-83	2	CBY		55,754	71,943
5	R01 GM20690-09 22250	WARNER, FRED D CILIARY MOTION: DYNEIN BEHAVIOR AND MICROTUBULE SLIDING	SYRACUSE UNIVERSITY AT SYRACUSE	SYRACUSE	NEW YORK	82	05-83	2	CBY		61,462	100,177
5	R01 GM20910-06 22300	KANESHIRO, EDNA S MEMBRANE ALTERATIONS IN BEHAVIORAL MUTANTS	UNIVERSITY OF CINCINNATI	CINCINNATI	OHIO	81	11-82	0	CBY		53,157	72,407

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3	R01 GM20910-06S1	KANESHIRO, EDNA S	UNIVERSITY OF CINCINNATI		81	11-82	0	CBY	
	22300	MEMBRANE ALTERATIONS IN BEHAVIORAL MUTANTS		CINCINNATI OHIO				28,600	28,600
5	R01 GM21931-07	BROKAW, CHARLES J	CALIFORNIA INSTITUTE OF TECHNOLOGY		82	03-83	1	CBY	
	22250	COMPUTER SIMULATION OF SLIDING FILAMENT SYSTEMS		PASADENA CALIFORNIA				13,872	20,531
2	R01 GM22497-07	SHERLINE, PETER	UNIVERSITY OF CONNECTICUT HEALTH CENTER		82	08-83	2	CBY	
	22250	REGULATION OF MICROTUBULE ASSEMBLY IN VIVO		FARMINGTON CONNECTICUT				70,545	96,733
5	R01 GM22500-07	LERNER, RICHARD A	SCRIPPS CLINIC AND RESEARCH FOUNDATION		82	04-83	1	CBY	
	22200	THE CELLULAR SLIME MOLD AS A MODEL FOR HUMAN DEVELOPMENT		LA JOLLA CALIFORNIA				86,400	142,474
2	R01 GM23238-07	CANDE, W ZACHEUS	UNIVERSITY OF CALIFORNIA BERKELEY		82	06-83	4	CBY	
	22250	FUNCTIONAL MODEL FOR MITOSIS IN CELL LINES		BERKELEY CALIFORNIA				82,910	114,549
2	R01 GM23476-04	LUDUENA, RICHARD F	UNIVERSITY OF TEXAS HLTH SCI CTR SAN ANT		82	08-83	2	CBY	
	22250	CONTROL OF MICROTUBULE ASSEMBLY IN VITRO AND IN VIVO		SAN ANTONIO TEXAS				65,754	85,563
5	R01 GM23547-06	ROSEN, STEVEN D	UNIVERSITY OF CALIFORNIA SAN FRANCISCO		82	01-83	0	CBY	
	22200	CELL SURFACE LECTINS AND INTERCELLULAR ADHESION		SAN FRANCISCO CALIFORNIA				77,785	101,588
5	R01 GM23635-05	DI BERARDINO, MARIE A	MEDICAL COLLEGE OF PENNSYLVANIA		82	03-83	1	CBY	
	21700	NORMAL DIFFERENTIATION AND CARCINOGENESIS		PHILADELPHIA PENNSYLVANIA				76,038	117,144
5	R01 GM23910-06	SHAPIRO, BENNETT M	UNIVERSITY OF WASHINGTON		82	07-83	2	CBY	
	22200	MOLECULAR EVENTS IN FERTILIZATION		SEATTLE WASHINGTON				85,235	113,875
5	R01 GM24118-05	KEDES, LAURENCE H	STANFORD UNIVERSITY		81	06-83	0	CBY	
	21750	HISTONE GENE TRANSCRIPTION IN EMBRYONIC DEVELOPMENT		STANFORD CALIFORNIA				43,016	62,373
5	R01 GM24172-06	KIRK, DAVID L	WASHINGTON UNIVERSITY		82	07-83	0	CBY	
	22200	GENETIC CONTROL OF MORPHOGENESIS IN VOLVOX		SAINT LOUIS MISSOURI				58,044	89,968
2	R01 GM24364-04	SALMON, EDWARD D	UNIVERSITY OF NORTH CAROLINA CHAPEL HILL		82	11-82	4	CBY	
	22250	MECHANISMS OF MITOTIC SPINDLE ASSEMBLY AND FUNCTION		CHAPEL HILL NORTH CAROLINA				97,233	120,066

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5	R01 GM24444-05 22250	FULTON, CHANDLER M CELL DIFFERENTIATION AND ORGANELLE MORPHOGENESIS	BRANDEIS UNIVERSITY	WALTHAM	MASSACHUSETTS	82	03-83	0	CBY	88,542	141,417
5	R01 GM24604-03 22200	MICHAELS, JOHN E EFFECTS OF DIAZOOXONORLEUCINE ON COLON SURFACE CELLS	UNIVERSITY OF CINCINNATI	CINCINNATI	OHIO	81	12-82	0	CBY	25,742	35,524
5	R01 GM24800-05 22250	EDELSTEIN, STUART J STRUCTURE AND ASSEMBLY OF TUBULIN	CORNELL UNIVERSITY ITHACA	ITHACA	NEW YORK	82	01-83	3	CBY	57,908	90,743
5	R01 GM24878-03 22250	BURCHILL, BROWER R ROLE OF THE CILIATE CORTEX IN METABOLIC REGULATION	UNIVERSITY OF KANSAS LAWRENCE	LAWRENCE	KANSAS	81	12-82	0	CBY	22,680	30,051
5	R01 GM24943-05 22200	HORVITZ, HOWARD R CONTROL OF CELL DIVISION IN THE NEMATODE C ELEGANS	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	CAMBRIDGE	MASSACHUSETTS	82	03-83	3	CBY	40,725	57,001
2	R01 GM24958-04 22250	PURICH, DANIEL L MOLECULAR MECHANISMS OF MICROTUBULE INTERACTIONS	UNIVERSITY OF CALIFORNIA SANTA BARBARA	SANTA BARBARA	CALIFORNIA	82	05-83	2	CBY	69,486	87,818
5	R01 GM24992-17 22250	BURTON, PAUL R EM STUDIES OF SPERM AND NERVE: FOCUS ON MICROTUBULES	UNIVERSITY OF KANSAS LAWRENCE	LAWRENCE	KANSAS	81	11-82	0	CBY	30,340	40,013
5	R01 GM25120-06 22250	HEPLER, PETER K ROLE OF CALCIUM AND MEMBRANES IN MITOSIS	UNIVERSITY OF MASSACHUSETTS AMHERST	AMHERST	MASSACHUSETTS	82	08-83	2	CBY	67,862	97,230
5	R01 GM25125-03 22300	OJAKIAN, GEORGE K FREEZE-ETCH STUDIES OF DEVELOPING TIGHT JUNCTIONS	DOWNSTATE MEDICAL CENTER	NEW YORK	NEW YORK	80	03-83	0	CBY	33,017	47,421
2	R01 GM25243-05 HD 22200	WARD, SAMUEL GENETIC SPECIFICATION OF CELL MORPHOLOGY	CARNEGIE INSTITUTION OF WASHINGTON D C	BALTIMORE	MARYLAND	82	08-83	4	CBY	59,695	95,468
5	R01 GM25653-05 22250	SANGER, JOSEPH W ANALYSIS OF CELL DIVISION AND CELL MOTILITY	UNIVERSITY OF PENNSYLVANIA	PHILADELPHIA	PENNSYLVANIA	82	08-83	2	CBY	88,271	144,217
5	R01 GM25661-05 22300	SHELL, WILLIAM J CELL SURFACE RECOGNITION AND CELL INTERACTIONS	UNIVERSITY OF TEXAS HLTH SCI CTR DALLAS	DALLAS	TEXAS	82	06-83	2	CBY	55,432	74,897

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5	R01 GM25662-05 22300	ROTHMAN, JAMES E BIOCHEMISTRY OF CLATHRIN-COATED VESICLES	STANFORD UNIVERSITY	STANFORD CALIFORNIA	82	07-83	1	CBY	85,013	131,421
2	R01 GM25813-04 22250	CONDEELIS, JOHN S INTERACTIONS OF ACTIN CYTOSKELETON WITH PLASMA MEMBRANE	YESHIVA UNIVERSITY	NEW YORK NEW YORK	82	11-82	4	CBY	69,232	121,255
5	R01 GM26086-04 21600	VARSHAVSKY, ALEXANDER J STRUCTURE OF CELLULAR AND VIRAL CHROMATIN STUDIES	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	CAMBRIDGE MASSACHUSETTS	82	11-82	1	CBY	55,077	77,969
2	R01 GM26091-04 22250	BRYAN, JOSEPH CHEMISTRY AND LOCALIZATION OF ACTIN GELLING PROTEINS	BAYLOR COLLEGE OF MEDICINE	HOUSTON TEXAS	82	11-82	4	CBY	94,562	128,604
5	R01 GM26121-04 22250	BAJER, ANDREW S MITOSIS EXPERIMENTAL STUDIES	UNIVERSITY OF OREGON	EUGENE OREGON	82	03-83	1	CBY	70,757	93,015
5	R01 GM26132-05 22250	POLLARD, THOMAS D ACTOMYOSIN-MICROTUBULE INTERACTIONS IN CELL DIVISION	JOHNS HOPKINS UNIVERSITY	BALTIMORE MARYLAND	82	06-83	0	CBY	86,262	128,816
5	R01 GM26228-03 22200	WEIGEL, PAUL H CELL RECOGNITION AND RESPONSES TO EXTERNAL CARBOHYDRATES	UNIVERSITY OF TEXAS MED BR GALVESTON	GALVESTON TEXAS	82	11-82	0	CBY	45,301	60,631
2	R01 GM26392-04 22250	DEWEY, MAYNARD M LIMULUS THICK FILAMENT STRUCTURE	STATE UNIVERSITY NEW YORK STONY BROOK	STONY BROOK NEW YORK	82	06-83	2	CBY	73,501	108,939
5	R01 GM26430-18 22400	TOUSTER, OSCAR BIOCHEMICAL STUDIES ON LYSOSOMES AND RELATED ENZYMES	VANDERBILT UNIVERSITY	NASHVILLE TENNESSEE	82	06-83	2	CBY	73,655	115,840
2	R01 GM26524-04 22300	CASTLE, JOHN D EXOCYTOSIS: IN VITRO STUDIES	YALE UNIVERSITY	NEW HAVEN CONNECTICUT	82	03-83	4	CBY	61,092	94,437
2	R01 GM26701-04 22250	VALLEE, RICHARD B STRUCTURE, PHOSPHORYLATION & FUNCTION OF MAPS	WORCESTER FDN FOR EXPER BIOLOGY	SHREWSBURY MASSACHUSETTS	82	06-83	2	CBY	81,415	128,733
2	R01 GM26726-04 22250	JOHNSON, KENNETH A KINETIC ANALYSIS OF THE DYNEIN ATPASE MECHANISM	PENNSYLVANIA STATE UNIVERSITY UNIV PARK	UNIVERSITY PARK PENNSYLVANIA	82	06-83	2	CBY	92,529	118,950

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2	R01 GM26732-04 22250	FARRELL, KEVIN W CONTROL OF MICROTUBULE PROPERTIES AND FUNCTIONS	UNIVERSITY OF CALIFORNIA	SANTA BARBARA SANTA BARBARA	82 CALIFORNIA	06-83	2	CBY 74,948	101,504
5	R01 GM26742-03 21600	PINON, RAMON, JR FOLDED CHROMOSOMES FROM MITOTIC AND MEIOTIC CELLS	UNIVERSITY OF CALIFORNIA	SAN DIEGO LA JOLLA	81 CALIFORNIA	12-82	0	CBY 64,517	84,517
2	R01 GM26763-04 22300	JACKSON, ROBERT C BIOSYNTHESIS AND SEGREGATION OF SECRETORY PROTEINS	DARTMOUTH COLLEGE	HANOVER	82 NEW HAMPSHIRE	08-83	2	CBY 64,000	92,596
5	R01 GM26802-03 22250	MULLINS, JAMES M STRUCTURAL AND CHEMICAL ANALYSIS OF THE MIDBODY	CATHOLIC UNIVERSITY OF AMERICA	WASHINGTON	81 DIST OF COL	02-83	0	CBY 19,399	29,226
5	R01 GM27124-03 22250	PICKETT-HEAPS, J D CELL DIVISION STUDIES USING THE DIATOM SPINDLE	UNIVERSITY OF COLORADO AT BOULDER	BOULDER	82 COLORADO	02-83	1	CBY 47,391	64,096
5	R01 GM27215-03 21320	KIRK, DAVID L ANALYSIS OF CONTROL GENE ACTION IN VOLVOX DEVELOPMENT	WASHINGTON UNIVERSITY	SAINT LOUIS	82 MISSOURI	12-82	0	CBY 62,340	96,627
5	R01 GM27220-03 22200	BARNES, LARRY D MODULATION OF THE CELL CYCLE BY CYCLIC NUCLEOTIDES	UNIVERSITY OF TEXAS HLTH SCI CTR SAN ANT	SAN ANTONIO	82 TEXAS	12-82	0	CBY 33,143	45,074
5	R01 GM27283-02 22300	ALLEN, RICHARD D CELLULAR MEMBRANE RECYCLING	UNIVERSITY OF HAWAII AT MANOA	HONOLULU	81 HAWAII	02-83	0	CBY 19,379	25,697
5	R01 GM27284-03 22250	ALLEN, ROBERT D CYTOPLASMIC RHEOLOGY OF MOTILE CELLS	DARTMOUTH COLLEGE	HANOVER	82 NEW HAMPSHIRE	08-83	0	CBY 57,645	84,566
5	R01 GM27288-03 22250	LA FOUNTAIN, JAMES R, JR THE KINETOCHORE: A MOLECULAR CYTOCHEMICAL APPROACH	STATE UNIVERSITY OF NEW YORK AT BUFFALO	BUFFALO	82 NEW YORK	12-82	0	CBY 39,185	58,028
5	R01 GM27298-03 22300	SATIR, BIRGIT H GENETICS OF EXOCYTOSIS IN MORTAL/IMMORTAL PROTOZOA	YESHIVA UNIVERSITY	NEW YORK	82 NEW YORK	01-83	0	CBY 60,000	110,740
5	R01 GM27324-03 22250	PORTER, KEITH R CYTOPLASMIC GROUND SUBSTANCE: FORM, FUNCTION, RESPONSE	UNIVERSITY OF COLORADO AT BOULDER	BOULDER	82 COLORADO	02-83	0	CBY 78,620	109,675

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5	R01 GM27509-03 22300	GORDON, JULIUS A LECTINS, MEMBRANE BINDING AND BIOLOGIC REGULATION	UNIVERSITY OF COLORADO HLTH SCIENCES CTR	DENVER COLORADO	82	08-83	0	CBY	33,260	42,240
5	R01 GM27510-03 22250	SPUDICH, JAMES A ACTIN ASSEMBLY BEFORE AND AFTER FERTILIZATION	STANFORD UNIVERSITY	STANFORD CALIFORNIA	82	11-82	0	CBY	65,868	104,071
5	R01 GM27629-03 22200	TYSON, JOHN J CONTROL OF NUCLEAR DIVISION IN PHYSARUM POLYCEPHALUM	VIRGINIA POLYTECHNIC INST AND ST UNIV	BLACKSBURG VIRGINIA	82	03-83	1	CBY	30,269	43,285
5	R01 GM27733-02 22300	DE HARVEN, ETIENNE GM1 IN MYOBLAST DIFFERENTIATION AND TRANSFORMATION	SLOAN-KETTERING INSTITUTE FOR CANCER RES	NEW YORK NEW YORK	82	11-82	0	CBY	15,723	23,902
5	R01 GM27763-03 12930	BECKER, ROBERT P BIOMEDICAL APPLICATIONS OF BACKSCATTERED IMAGING	UNIVERSITY OF ILLINOIS MEDICAL CENTER	CHICAGO ILLINOIS	82	03-83	0	CBY	27,409	43,032
5	R01 GM27851-03 22300	ORR, GEORGE A SELECTIVE RETRIEVAL OF LABELED MEMBRANE COMPONENTS	YESHIVA UNIVERSITY	NEW YORK NEW YORK	82	03-83	0	CBY	68,193	125,635
5	R01 GM27892-03 22200	HANNA, MICHAEL H ESTABLISHMENT OF MULTICELLULARITY IN P. VIOLACEUM	RENSSELAER POLYTECHNIC INSTITUTE	TROY NEW YORK	82	03-83	0	CBY	29,221	46,754
5	R01 GM27894-03 22250	SOLOMON, FRANK E CYTOPLASMIC DETERMINATION OF DETAILED CELL MORPHOLOGY	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	CAMBRIDGE MASSACHUSETTS	82	03-83	0	CBY	62,192	101,379
5	R01 GM27903-03 22250	TAMM, SIDNEY L CELL MOTILITY, MEMBRANE FLUIDITY AND MECHANOTRANSDUCTION	BOSTON UNIVERSITY	BOSTON MASSACHUSETTS	82	04-83	2	CBY	81,613	106,468
5	R01 GM27919-03 22300	BRADLEY, TIMOTHY J CONTROL OF ION AND WATER TRANSPORT IN INSECT EPITHELIA	UNIVERSITY OF CALIFORNIA IRVINE	IRVINE CALIFORNIA	82	03-83	0	CBY	46,963	61,212
5	R01 GM27969-03 22200	FOREST, CHARLENE L FLAGELLAR SEXUAL SIGNALING IN CONDITIONAL MUTANTS	BROOKLYN COLLEGE	NEW YORK NEW YORK	82	07-83	0	CBY	42,595	68,834
5	R01 GM28007-03 22200	DEVREOTES, PETER N CAMP SIGNALS MEDIATING AGGREGATION IN DICTYOSTELIUM	JOHNS HOPKINS UNIVERSITY	BALTIMORE MARYLAND	82	06-83	0	CBY	43,937	65,906

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5	R01 GM28188-03 22300	STORRIE, BRIAN PROCESSING OF PINOCYTIC VESICLES IN FIBROBLASTS	VIRGINIA POLYTECHNIC INST AND ST UNIV	BLACKSBURG VIRGINIA	82	07-83	0	CBY	40,921	60,563
5	R01 GM28189-03 22250	MARGOLIS, ROBERT L REGULATION OF THE MICROTUBULE STEADY-STATE	FRED HUTCHINSON CANCER RESEARCH CENTER	SEATTLE WASHINGTON	82	06-83	0	CBY	47,098	50,904
5	R01 GM28277-03 22250	FERAMISCO, JAMES R INJECTION OF FLUORESCENTLY LABELLED PROTEINS INTO CELLS	COLD SPRING HARBOR LABORATORY	COLD SPRING HARB NEW YORK	82	06-83	0	CBY	44,450	79,165
5	R01 GM28307-03 22250	BEGG, DAVID A CELLULAR AND MOLECULAR BASIS OF CYTOKINESIS	HARVARD UNIVERSITY	BOSTON MASSACHUSETTS	82	06-83	0	CBY	52,370	102,540
5	R01 GM28397-03 22250	WOLOSEWICK, JOHN J THE CYTOPLASMIC GROUND SUBSTANCE IN TRANSFORMED CELLS	UNIVERSITY OF ILLINOIS MEDICAL CENTER	CHICAGO ILLINOIS	82	03-83	0	CBY	38,284	60,106
5	R01 GM28521-02 22300	GERACE, LARRY R STRUCTURE AND FUNCTIONS OF THE NUCLEAR ENVELOPE	JOHNS HOPKINS UNIVERSITY	BALTIMORE MARYLAND	82	11-82	1	CBY	52,205	78,308
5	R01 GM28660-02 22250	WISE, DWAYNE A CONTROL OF CHROMOSOME DISTRIBUTION AT MEIOSIS	MISSISSIPPI STATE UNIVERSITY	MISSISSIPPI STAT MISSISSIPPI	82	11-82	1	CBY	30,994	39,547
5	R01 GM28702-02 22250	PIPERNO, GIANNI MICROTUBULES OF MITOTIC APPARATUS	ROCKEFELLER UNIVERSITY	NEW YORK NEW YORK	82	01-83	1	CBY	52,533	79,720
2	R01 GM28766-02A1 22300	BLOODGOOD, ROBERT A STUDIES ON MEMBRANE-ASSOCIATED MOTILITY	UNIVERSITY OF VIRGINIA CHARLOTTESVILLE	CHARLOTTESVILLE VIRGINIA	82	06-83	2	CBY	70,665	97,897
5	R01 GM28832-03 22300	PETERSON, SCOTT W ISOLATION OF THE ERYTHROCYTE MEMBRANE CA2+-ATPASE	BOSTON UNIVERSITY	BOSTON MASSACHUSETTS	82	07-83	0	CBY	34,013	61,087
5	R01 GM28886-02 22250	HAIMO, LEAH T THE POLARITY AND FUNCTION OF MICROTUBULES	UNIVERSITY OF CALIFORNIA RIVERSIDE	RIVERSIDE CALIFORNIA	82	03-83	1	CBY	42,023	55,050
5	R01 GM29130-02 22200	BODE, HANS R PATTERN FORMATION IN REGENERATING PIECES OF HYDRA	UNIVERSITY OF CALIFORNIA IRVINE	IRVINE CALIFORNIA	82	03-83	1	CBY	28,849	37,792

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5	R01 GM29133-02 22300	HUBBARD, ANN L RECEPTOR-MEDIATED ENDOCYTOSIS IN HEPATOCYTES	JOHNS HOPKINS UNIVERSITY	BALTIMORE MARYLAND	82	03-83	3	CBY 65,588	2,382
5	R01 GM29261-03 22250	SHAY, JERRY W TUBULIN AND THE REGULATION OF STEROID BIOGENESIS	UNIVERSITY OF TEXAS HLTH SCI CTR DALLAS	DALLAS TEXAS	82	08-83	0	CBY 31,943	43,283
5	R01 GM29262-03 22400	MILLER, ARNOLD L STUDIES OF LYSOSOMAL GLYCOPROTEINS IN SLIME MOLD	UNIVERSITY OF CALIFORNIA SAN DIEGO	LA JOLLA CALIFORNIA	82	08-83	0	CBY 62,380	83,028
5	R01 GM29477-02 22250	HOWARD, THOMAS H STUDY OF ACTIN IN POLYMORPHONUCLEAR LEUKOCYTES	UNIVERSITY OF VIRGINIA CHARLOTTESVILLE	CHARLOTTESVILLE VIRGINIA	82	08-83	1	CBY 39,644	57,484
5	R01 GM29503-02 22250	STEPHENS, RAYMOND E MECHANOSENSITIVITY AND THE CONTROL OF CILIARY MOVEMENT	MARINE BIOLOGICAL LABORATORY	WOODS HOLE MASSACHUSETTS	82	06-83	1	CBY 41,976	83,952
5	R01 GM29860-02 22250	BURRIDGE, KEITH W NONMUSCLE ALPHA-ACTININ AND ACTIN-MEMBRANE INTERACTION	UNIVERSITY OF NORTH CAROLINA CHAPEL HILL	CHAPEL HILL NORTH CAROLINA	82	03-83	0	CBY 85,295	119,072
1	R01 GM29955-01 22250	CABRAL, FERNANDO R GENETIC APPROACH TO MICROTUBULE FUNCTION IN CHO CELLS	UNIVERSITY OF TEXAS HLTH SCI CTR HOUSTON	HOUSTON TEXAS	82	01-83	2	CBY 70,471	86,344
1	R01 GM30062-01 22300	NUCCITELLI, RICHARD L DEVELOPMENT AND MAINTENANCE OF EPITHELIAL CELL POLARITY	UNIVERSITY OF CALIFORNIA DAVIS	DAVIS CALIFORNIA	82	08-83	2	CBY 71,305	84,850
1	R01 GM30213-01 22250	MC INTOSH, J RICHARD FUNCTIONS OF MITOTIC SPINDLE PROTEINS	UNIVERSITY OF COLORADO AT BOULDER	BOULDER COLORADO	82	03-83	2	CBY 67,571	91,694
1	R01 GM30219-01 22300	GUSTAFSON, GARY L CONTROL OF INTRACELLULAR PROTEINASE COMPARTMENTATION	UNIVERSITY OF MONTANA	MISSOULA MONTANA	82	12-82	2	CBY 57,150	79,013
7	R01 GM30295-01 22250	CARRAWAY, KERMIT L MEMBRANE-CYTOSKELETON INTERACTIONS	UNIVERSITY OF MIAMI	MIAMI FLORIDA	81	11-82	0	CBY 30,000	57,260
5	R01 GM30341-02 22450	MC KEEHAN, WALLACE L OXOCARBOXYLIC ACIDS AND NAD PLUS/NADH IN CELL GROWTH	W. ALTON JONES CELL SCIENCE CENTER	LAKE PLACID NEW YORK	82	12-82	0	CBY 52,009	90,132

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9	R01 GM30401-06 HD 22250	GIBBONS, IAN R PROPERTIES OF DYNEIN ISOENZYMES	UNIVERSITY OF HAWAII AT MANOA	HONOLULU	HAWAII	82	03-83	4	89,335	CBY 117,362
1	R01 GM30450-01 22250	FORMAN, DAVID S PERMEABILIZED CELL MODEL OF SALTATORY ORGANELLE MOVEMENT	U.S. UNIFORMED SERVICES UNIV OF HLTH SCI	BETHESDA	MARYLAND	82	04-83	2	57,855	CBY 57,855
5	R01 GM30603-02 22250	BRETSCHER, ANTHONY P MICROFILAMENT ORGANIZATION AND MEMBRANE ATTACHMENT	CORNELL UNIVERSITY ITHACA	ITHACA	NEW YORK	82	08-83	0	41,003	CBY 56,764
1	R01 GM30647-01 22200	LENHOFF, HOWARD M MODEL FOR BASEMENT MEMBRANE-EPITHELIAL CELL INTERACTIONS	UNIVERSITY OF CALIFORNIA IRVINE	IRVINE	CALIFORNIA	82	04-83	2	62,241	CBY 75,878
1	R01 GM30667-01 22300	HERTZBERG, ELLIOT L PROBES FOR THE STUDY OF GAP JUNCTIONAL COMMUNICATION	BAYLOR COLLEGE OF MEDICINE	HOUSTON	TEXAS	82	04-83	2	87,306	CBY 101,276
1	R13 GM30792-01 GM 22300	SILVERSTEIN, SAMUEL C LYSOSOMES IN THE REGULATION OF CYTOPLASMIC FUNCTION	GORDON RESEARCH CONFERENCES	KINGSTON	RHODE ISLAND	82	05-83	0	3,000	CBY 3,000
1	R01 GM31003-01 22250	TELZER, BRUCE R CELL DIVISION: ANALYSIS OF THE MITOTIC APPARATUS	POMONA COLLEGE	CLAREMONT	CALIFORNIA	82	06-83	2	62,755	CBY 81,633
1	R01 GM31005-01 22250	ZIEVE, GARY W MITOSIS SPECIFIC CHANGES IN THE MAMMALIAN CYTOSKELETON	STATE UNIVERSITY NEW YORK STONY BROOK	STONY BROOK	NEW YORK	82	08-83	2	64,751	CBY 89,563
1	R01 GM31041-01 22250	SCHLIWA, MANFRED INTRACELLULAR ORGANELLE TRANSPORT	UNIVERSITY OF CALIFORNIA BERKELEY	BERKELEY	CALIFORNIA	82	06-83	2	72,228	CBY 90,760
1	R01 GM31048-01 22200	LIN, JIM J GOLI-ASSOCIATED, HEAT-SHOCK PROTEIN	COLD SPRING HARBOR LABORATORY	COLD SPRING HARB	NEW YORK	82	08-83	2	57,069	CBY 101,640
5	R01 GM31080-02 13410	MESCHER, ANTHONY LOUIS INJURY-INDUCED GROWTH AND MYELIN-DERIVED GROWTH FACTORS	INDIANA UNIV-PURDUE UNIV AT INDIANAPOLIS	INDIANAPOLIS	INDIANA	82	05-83	0	27,872	CBY 39,123
1	R01 GM31168-01 22300	AUGUST, J THOMAS PURIFICATION OF CELL SURFACE DIFFERENTIATION ANTIGENS	JOHNS HOPKINS UNIVERSITY	BALTIMORE	MARYLAND	82	06-83	4	122,000	CBY 183,000

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1	R01 GM31198-01 HD 22250	KUBAI, DONNA F EVOLUTION OF CHROMOSOME MOVEMENT	DUKE UNIVERSITY	DURHAM NORTH CAROLINA	82	07-83	4	CBY	42,313	55,970
1	R01 GM31202-01 12930	MC GRATH, JOHN J OSMOSIS AND FREEZING IN LARGE UNILAMELLAR LIPOSOMES	MICHIGAN STATE UNIVERSITY	EAST LANSING MICHIGAN	82	07-83	2	CBY	76,421	91,706
5	R01 GM31244-02 22300	KEENAN, THOMAS W ENDOMEMBRANE INTERCONVERSION IN MILK FORMATION	VIRGINIA POLYTECHNIC INST AND ST UNIV	BLACKSBURG VIRGINIA	82	08-83	1	CBY	74,102	109,671
7	R01 GM31617-01 22250	INOUE, SHINYA MITOSIS AND RELATED MOTILITY DIRECTLY IN LIVING CELLS	MARINE BIOLOGICAL LABORATORY	WOODS HOLE MASSACHUSETTS	82	03-83	3	CBY	209,114	227,226
***	0	* CENTERS							0	0
***	111	NONCENTERS							6,529,738	9,354,875
***	111	TOTAL							6,529,738	9,354,875
5	R13 GM31136-04 22300	GROSS, PAUL R PHYSIOLOGY AND MOLECULAR BIOLOGY	MARINE BIOLOGICAL LABORATORY	WOODS HOLE MASSACHUSETTS	82	12-82	1	CMBD	95,933	95,933
***	0	* CENTERS							0	0
***	1	NONCENTERS							95,933	95,933
***	1	TOTAL							95,933	95,933

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5	R01 GM19545-11 22200	HOROWITZ, SAMUEL B REGULATION OF NUCLEAR-CYTOPLASMIC SOLUTE TRANSPORT	MICHIGAN CANCER FOUNDATION	DETROIT	MICHIGAN	82	07-83	1	CP		88,690	134,043
5	R01 GM19998-09 22300	WILLIAMS, JOHN A ROLE OF CELL MEMBRANE IN HORMONE SECRETION AND ACTION	UNIVERSITY OF CALIFORNIA SAN FRANCISCO	SAN FRANCISCO	CALIFORNIA	82	12-82	1	CP		92,400	120,734
2	R01 GM20737-09 22300	OXENDER, DALE L TRANSPORT COMPONENTS FROM EUKARYOTES	UNIVERSITY OF MICHIGAN AT ANN ARBOR	ANN ARBOR	MICHIGAN	82	03-83	4	CP		94,430	145,893
5	R01 GM23100-06 22300	HAKOMORI, SEN-ITIROH ANTI-CARBOHYDRATE ANTIBODIES IN CELL BIOLOGY	FRED HUTCHINSON CANCER RESEARCH CENTER	SEATTLE	WASHINGTON	82	02-83	3	CP		67,456	75,687
2	R01 GM23244-07 22300	HORWITZ, ALAN F DETERMINANTS OF MYOGENIC MEMBRANE PHENOMENA	UNIVERSITY OF PENNSYLVANIA	PHILADELPHIA	PENNSYLVANIA	82	06-83	4	CP		118,033	175,787
5	R01 GM23331-04 21100	BLOCH, DAVID P FLOW-CYTOMETRIC STUDIES OF CHROMATIN	UNIVERSITY OF TEXAS AUSTIN	AUSTIN	TEXAS	82	02-83	1	CP		42,969	56,958
2	R01 GM24251-06 22250	HARRIS, ALBERT K CONTROL AND GUIDANCE OF TISSUE CELL LOCOMOTION	UNIVERSITY OF NORTH CAROLINA CHAPEL HILL	CHAPEL HILL	NORTH CAROLINA	82	08-83	2	CP		72,593	91,938
5	R01 GM24571-05 22200	PARDEE, ARTHUR B BIOCHEMISTRY OF G0/G1 REGULATION IN ANIMAL CELLS	SIDNEY FARBER CANCER INSTITUTE	BOSTON	MASSACHUSETTS	82	04-83	1	CP		86,015	147,118
5	R01 GM25080-05 22200	KLEIN, CLAUDETTE BIOGENESIS OF A CHEMOTACTIC SYSTEM IN D. DISCOIDEUM	ST. LOUIS UNIVERSITY	SAINT LOUIS	MISSOURI	82	08-83	1	CP		74,075	110,363
2	R01 GM25461-05 22250	JACOBSON, BRUCE S PLASMA MEMBRANES INVERTED ON BEADS--ACTIN BINDING	UNIVERSITY OF MASSACHUSETTS AMHERST	AMHERST	MASSACHUSETTS	82	07-83	2	CP		66,417	92,930
2	R01 GM25588-04 22200	BERGER, EDWARD A A SURFACE LECTIN AND CELL COHESION IN DICTYOSTELIUM	WORCESTER FDN FOR EXPER BIOLOGY	SHREWSBURY	MASSACHUSETTS	82	03-83	2	CP		79,574	129,716
5	R01 GM25652-05 21750	MORSE, DANIEL E GENETIC REGULATION BY CYCLIC AMP IN TETRAHYMENA	UNIVERSITY OF CALIFORNIA SANTA BARBARA	SANTA BARBARA	CALIFORNIA	82	06-83	1	CP		73,436	101,976

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2	R01 GM26150-04 22200	GOODENOUGH, URSULA W FLAGELLAR MEMBRANE ADHESION AND SEXUAL SIGNALING	WASHINGTON UNIVERSITY	SAINT LOUIS MISSOURI	82	03-83	4	CP		115,581	160,610
5	R01 GM26165-03 22200	JULIANO, RUDOLPH L THE MOLECULAR BASES OF CELL ADHESION	UNIVERSITY OF TEXAS HLTH SCI CTR HOUSTON	HOUSTON TEXAS	82	08-83	0	CP		44,893	61,952
2	R01 GM26743-04 22200	MALLER, JAMES L CONTROL OF CELL DIVISION BY CYCLIC AMP	UNIVERSITY OF COLORADO HLTH SCIENCES CTR	DENVER COLORADO	82	06-83	2	CP		58,610	73,031
2	R01 GM26755-04 22300	SCHEKMAN, RANDY BIOLOGICAL STUDIES OF EUCARYOTIC CELL SURFACE GROWTH	UNIVERSITY OF CALIFORNIA BERKELEY	BERKELEY CALIFORNIA	82	06-83	4	CP		101,600	139,980
2	R01 GM26968-04 22200	NOLL, HANS CELL SURFACE PROTEINS IN EMBRYOGENESIS	NORTHWESTERN UNIVERSITY	EVANSTON ILLINOIS	82	07-83	2	CP		101,640	133,703
5	R01 GM27153-03 22200	MC KANNA, JAMES A E.M. STUDIES OF CELLS AND EPIDERMAL GROWTH FACTOR	VANDERBILT UNIVERSITY	NASHVILLE TENNESSEE	82	06-83	0	CP		66,752	107,471
5	R01 GM27203-02 22200	WANG, JOHN L MOLECULAR ANALYSIS OF GROWTH REGULATORY FACTOR	MICHIGAN STATE UNIVERSITY	EAST LANSING MICHIGAN	82	01-83	1	CP		46,246	62,747
5	R01 GM27989-03 22300	LODISH, HARVEY F STRUCTURE AND BIOSYNTHESIS OF AN HEPATIC RECEPTOR	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	CAMBRIDGE MASSACHUSETTS	82	06-83	0	CP		66,945	96,712
5	R01 GM28207-03 22300	RAGHAVAN, SRINIVASA SPHINGOLIPID METABOLISM IN HUMAN SKIN FIBROBLASTS	EUNICE KENNEDY SHRIVER CTR MTL RETARDATN	WALTHAM MASSACHUSETTS	82	07-83	0	CP		63,615	95,677
5	R01 GM28526-02 22300	KEEN, JAMES H CLATHRIN AND MEMBRANE FUNCTION	TEMPLE UNIVERSITY	PHILADELPHIA PENNSYLVANIA	82	11-82	1	CP		54,040	80,561
5	R01 GM28644-02 22200	PANTAZIS, NICHOLAS J FUNCTION AND MOLECULAR STRUCTURE OF GROWTH FACTORS	UNIVERSITY OF IOWA	IOWA CITY IOWA	82	11-82	1	CP		43,051	59,410
5	R01 GM29127-02 22300	JACOBSON, BRUCE S PLASMA-MEMBRANE REGIONS AS CELLS GROW IN MONOLAYERS	UNIVERSITY OF MASSACHUSETTS AMHERST	AMHERST MASSACHUSETTS	82	03-83	1	CP		35,702	51,768

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5	R01 GM29131-02 22200	LILIEN, JACK E SURFACE TRANSFERASE: PROPERTIES & ROLE IN CELL ADHESION	UNIVERSITY OF WISCONSIN	MADISON	WISCONSIN	82	03-83	1	CP 61,223	87,549
5	R01 GM29185-03 22300	HUBBARD, ANN L BIOLOGY OF DIFFERENTIATED SURFACE DOMAINS IN HEPATOCYTES	JOHNS HOPKINS UNIVERSITY	BALTIMORE	MARYLAND	82	08-83	2	CP 97,830	143,745
1	R01 GM29321-01A1 22300	SALISBURY, JEFFREY L RECEPTOR-MEDIATED ENDOCYTOSIS: MACROMOLECULAR MACHINERY	YESHIVA UNIVERSITY	NEW YORK	NEW YORK	82	08-83	2	CP 63,586	101,500
5	R01 GM29323-03 22250	DEDMAN, JOHN R BIOLOGICAL ROLE OF INTRACELLULAR CA2+-BINDING PROTEINS	UNIVERSITY OF TEXAS HLTH SCI CTR HOUSTON	HOUSTON	TEXAS	82	08-83	1	CP 58,410	80,606
5	R01 GM29514-02 22300	SZOKA, FRANCIS C, JR MICROINJECTION INTO CELLS BY A LIPOSOME SYSTEM	UNIVERSITY OF CALIFORNIA SAN FRANCISCO	SAN FRANCISCO	CALIFORNIA	82	03-83	1	CP 48,129	63,049
5	R01 GM29765-02 22300	MELLMAN, IRA S ADSORPTIVE ENDOCYTOSIS AND PLASMA MEMBRANE FUNCTION	YALE UNIVERSITY	NEW HAVEN	CONNECTICUT	82	06-83	2	CP 48,859	81,403
1	R01 GM30209-01 22250	BERLIN, RICHARD D SURFACE FUNCTIONS DURING MITOSIS	UNIVERSITY OF CONNECTICUT HEALTH CENTER	FARMINGTON	CONNECTICUT	82	01-83	4	CP 95,860	135,622
1	R01 GM30218-01 22300	WEIGEL, PAUL H ENDOCYTOSIS AND RECYCLING OF THE GALACTOSYL RECEPTOR	UNIVERSITY OF TEXAS MED BR GALVESTON	GALVESTON	TEXAS	82	01-83	2	CP 59,881	79,089
1	R01 GM30236-01 22200	RIGNEY, DAVID R COMPARISON OF SIBLING CELLS	INSTITUTE FOR CANCER RESEARCH	PHILADELPHIA	PENNSYLVANIA	82	01-83	2	CP 94,765	126,045
1	R01 GM30729-01 22400	BYNG, GRAHAM S ENZYMIC INTERFACE BETWEEN PRIMARY & SECONDARY METABOLISM	STATE UNIVERSITY NEW YORK BINGHAMTON	BINGHAMTON	NEW YORK	82	04-83	2	CP 41,395	59,558
1	R01 GM30823-01 22300	DRICKAMER, KURT STRUCTURE OF RECEPTORS FOR ENDOCYTOSIS OF GLYCOPROTEINS	UNIVERSITY OF CHICAGO	CHICAGO	ILLINOIS	82	01-83	2	CP 86,325	124,275
1	R01 GM30861-01 22200	WATTERSON, DANIEL M MOLECULAR BASIS OF CALCIUM ACTION IN CELL PROCESSES	VANDERBILT UNIVERSITY	NASHVILLE	TENNESSEE	82	03-83	2	CP 53,800	83,121

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1	R01 GM31004-01 CA 22200	TSIEN, ROGER Y ROLE OF INTRACELLULAR FREE CALCIUM IN CELL PROLIFERATION	UNIVERSITY OF CALIFORNIA	BERKELEY BERKELEY CALIFORNIA	82	06-83	2	CP	82,040	100,043
1	R01 GM31373-01 22200	KENDE, HANS J SITE OF ACTION OF CYTOKININS	MICHIGAN STATE UNIVERSITY	EAST LANSING MICHIGAN	82	06-83	1	CP	29,242	41,231
***	0	* CENTERS							0	0
***	38	NONCENTERS							2,676,108	3,813,601
***	38	TOTAL							2,676,108	3,813,601
2	R01 GM24235-04 11920	RODGERS, MICHAEL A SINGLET OXYGEN IN BIOLOGICAL ENVIRONMENTS	UNIVERSITY OF TEXAS AUSTIN	AUSTIN TEXAS	82	12-82	2	CPA	77,730	99,336
5	R01 GM24711-05 21250	MOSES, ROBB E CELLULAR DNA REPAIR MECHANISMS AND MUTAGENESIS	BAYLOR COLLEGE OF MEDICINE	HOUSTON TEXAS	82	07-83	3	CPA	64,558	87,799
2	R01 GM24798-04 21250	TOPAL, MICHAEL D MOLECULAR BASIS OF ENVIRONMENTALLY INDUCED MUTATIONS	UNIVERSITY OF NORTH CAROLINA CHAPEL HILL	CHAPEL HILL NORTH CAROLINA	82	03-83	4	CPA	66,306	87,613
5	R01 GM28910-02 21250	CAIRNS, JOHN SYSTEMS THAT PROJECT AGAINST MUTAGENESIS	HARVARD UNIVERSITY	BOSTON MASSACHUSETTS	82	08-83	1	CPA	32,664	57,489
***	0	* CENTERS							0	0
***	4	NONCENTERS							241,258	332,237
***	4	TOTAL							241,258	332,237

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2	R01 GM10991-23 21600	DAVIDSON, NORMAN R PHYSICIAL CHEMISTRY OF NUCLEIC ACIDS	CALIFORNIA INSTITUTE OF TECHNOLOGY	PASADENA CALIFORNIA	82	05-83	3	CTY 211,358	310,650
5	R01 GM15971-15 22300	SINGER, S JONATHAN MOLECULAR APPROACHES TO CELL ULTRASTRUCTURE	UNIVERSITY OF CALIFORNIA SAN DIEGO	LA JOLLA CALIFORNIA	82	04-83	3	CTY 138,969	181,119
2	R01 GM16389-13 22410	BLUMENFELD, OLGA O PROTEINS OF THE CELL MEMBRANE	YESHIVA UNIVERSITY	NEW YORK NEW YORK	82	12-82	2	CTY 86,106	157,200
5	R01 GM18243-11 21600	PETTIJOHN, DAVID E PACKAGING OF DNA IN CHROMOSOMES	UNIVERSITY OF COLORADO HLTH SCIENCES CTR	DENVER COLORADO	82	11-82	3	CTY 70,255	86,777
5	R01 GM18375-11 21200	WOLSTENHOLME, DAVID R STRUCTURE OF MITOCHONDRIAL DNA	UNIVERSITY OF UTAH	SALT LAKE CITY UTAH	81	08-83	0	CTY 96,106	139,354
2	R01 GM18639-11 12930	STAEHELIN, L ANDREW STRUCTURE AND FUNCTION OF ULTRARAPIDLY FROZEN CELLS	UNIVERSITY OF COLORADO AT BOULDER	BOULDER COLORADO	82	03-83	4	CTY 92,438	128,951
5	R01 GM19199-11 21600	PRESCOTT, DAVID M THE GENETIC APPARATUS OF HYPOTRICHOUS CILIATES	UNIVERSITY OF COLORADO AT BOULDER	BOULDER COLORADO	82	07-83	2	CTY 108,030	151,134
5	R01 GM20396-10 22300	BRANTON, DANIEL ORGANIZATION OF NORMAL AND TRANSFORMED CELL MEMBRANES	HARVARD UNIVERSITY	CAMBRIDGE MASSACHUSETTS	82	05-83	0	CTY 80,724	122,965
5	R01 GM21615-07 22300	MAUL, GERD G QUANTITATIVE STUDY OF NUCLEAR & ANNULATE LAMELLAE PORES	WISTAR INSTITUTE OF ANATOMY AND BIOLOGY	PHILADELPHIA PENNSYLVANIA	82	11-82	0	CTY 63,829	108,927
5	R01 GM21948-06 21280	CUMMINGS, DONALD J REPLICATION, FUNCTION AND BIOGENESIS OF MITOCHONDRIA	UNIVERSITY OF COLORADO HLTH SCIENCES CTR	DENVER COLORADO	81	12-82	0	CTY 70,909	90,204
5	R01 GM21953-08 22300	GLASER, MICHAEL LIPID METABOLISM AND MEMBRANE STRUCTURE AND FUNCTION	UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN	URBANA ILLINOIS	82	12-82	3	CTY 79,459	112,598
5	R01 GM22135-08 21320	HERSHEY, JOHN W MECHANISM OF INITIATION OF PROTEIN BIOSYNTHESIS	UNIVERSITY OF CALIFORNIA DAVIS	DAVIS CALIFORNIA	82	07-83	0	CTY 92,836	127,000

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5	R01 GM22201-08 21600	GARRARD, WILLIAM T STRUCTURE OF THE SUBUNITS OF EUKARYOTIC CHROMOSOMES	UNIVERSITY OF TEXAS HLTH SCI CTR DALLAS	DALLAS TEXAS	82	04-83	0	CTY 57,000	75,283
2	R01 GM22289-08 22250	LIN, SHIN CYTOCHALASINS, ACTIN FILAMENTS, AND CELL MOTILITY	JOHNS HOPKINS UNIVERSITY	BALTIMORE MARYLAND	82	04-83	4	CTY 111,952	159,878
5	R01 GM22759-05 22300	BOLENDER, ROBERT P ANALYTICAL MORPHOLOGY AND BIOCHEMISTRY OF HEPATOCYTES	UNIVERSITY OF WASHINGTON	SEATTLE WASHINGTON	82	04-83	3	CTY 48,221	64,568
5	R01 GM22767-06 21700	YAFFE, DAVID CONTROL OF DIFFERENTIATION IN ESTABLISHED CELL LINES	WEIZMANN INSTITUTE OF SCIENCE	REHOVOT ISRAEL	82	12-82	0	CTY 48,801	48,801
5	R01 GM22912-06 22300	STAEHELIN, L ANDREW ADHESIVE INTERACTIONS BETWEEN MEMBRANES	UNIVERSITY OF COLORADO AT BOULDER	BOULDER COLORADO	82	06-83	2	CTY 53,826	74,584
5	R01 GM22951-07 21750	SUEOKA, NOBORU GENE EXPRESSION IN NERVOUS VS OTHER TISSUES	UNIVERSITY OF COLORADO AT BOULDER	BOULDER COLORADO	82	06-83	0	CTY 93,972	125,053
2	R01 GM23167-07 21700	TOBIN, ELAINE M PHYTOCHROME REGULATION OF SPECIFIC MRNA SPECIES	UNIVERSITY OF CALIFORNIA LOS ANGELES	LOS ANGELES CALIFORNIA	82	07-83	4	CTY 86,541	118,285
5	R01 GM23445-06 22200	BERNS, MICHAEL W CELL DIVISION STUDIED BY LASER	UNIVERSITY OF CALIFORNIA IRVINE	IRVINE CALIFORNIA	82	02-83	2	CTY 63,957	83,784
2	R01 GM23585-06 22300	KOPPEL, DENNIS E MEMBRANE DYNAMICS OF LOCOMOTING TISSUE CELLS	UNIVERSITY OF CONNECTICUT HEALTH CENTER	FARMINGTON CONNECTICUT	82	12-82	2	CTY 67,419	85,167
5	R01 GM23807-05 22200	ELLINGSON, JOHN S METABOLISM OF PHOSPHOLIPIDS IN SECONDARY LYSOSOMES	WEST VIRGINIA UNIVERSITY	MORGANTOWN WEST VIRGINIA	82	08-83	1	CTY 53,067	75,112
5	R01 GM23883-06 22250	WATERSTON, ROBERT H MOLECULAR GENETICS OF MUSCLE ASSEMBLY IN C. ELEGANS	WASHINGTON UNIVERSITY	SAINT LOUIS MISSOURI	82	03-83	2	CTY 64,974	99,335
5	R01 GM23922-05 21200	BEREZNEY, RONALD NUCLEAR MATRIX STRUCTURE AND DNA REPLICATION	STATE UNIVERSITY OF NEW YORK AT BUFFALO	BUFFALO NEW YORK	82	02-83	1	CTY 55,363	79,453

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5	R01 GM23944-03 22300	ALBERTE, RANDALL S CONTROL OF ORGANELLE MEMBRANE BIOGENESIS	UNIVERSITY OF CHICAGO	CHICAGO ILLINOIS	81	03-83	0	CTY	37,532	60,398
5	R01 GM24096-06 21700	GUILFOYLE, THOMAS J REGULATION OF RNA POLYMERASES DURING DEVELOPMENT	UNIVERSITY OF MINNESOTA OF MNPLS-ST PAUL	MINNEAPOLIS MINNESOTA	82	07-83	1	CTY	49,445	68,729
5	R01 GM24147-05 22300	DOYLE, DARRELL J MEMBRANE BIOGENESIS IN NORMAL AND MALIGNANT CELLS	ROSWELL PARK MEMORIAL INSTITUTE	BUFFALO NEW YORK	82	12-82	1	CTY	100,538	143,081
5	R01 GM24771-05 21750	HASTIE, NICHOLAS D REPETITIVE DNA SEQUENCES IN THE MOUSE GENOME	ROSWELL PARK MEMORIAL INSTITUTE	BUFFALO NEW YORK	82	12-82	1	CTY	63,389	90,362
5	R01 GM24797-05 22200	HERSCHMAN, HARVEY R INITIATION OF CELLULAR PROLIFERATION	UNIVERSITY OF CALIFORNIA LOS ANGELES	LOS ANGELES CALIFORNIA	82	12-82	2	CTY	80,717	105,429
5	R01 GM25101-05 21600	SEDAT, JOHN W STRUCTURAL DETERMINATION OF INTERPHASE CHROMOSOMES	UNIVERSITY OF CALIFORNIA SAN FRANCISCO	SAN FRANCISCO CALIFORNIA	82	03-83	1	CTY	60,764	78,376
5	R01 GM25240-06 22250	SPUDICH, JAMES A CONTROL OF ASSEMBLY AND INTERACTION OF MYOSIN	STANFORD UNIVERSITY	STANFORD CALIFORNIA	82	08-83	3	CTY	86,055	143,363
5	R01 GM25690-04 22410	CHUNG, ALBERT E CHARACTERIZATION BASEMENT MEMBRANE GLYCOPROTEINS	UNIVERSITY OF PITTSBURGH	PITTSBURGH PENNSYLVANIA	82	12-82	2	CTY	66,815	101,559
2	R01 GM25832-04 22200	SOLL, DAVID R THE REGULATION OF TIMING IN DEVELOPING SYSTEMS	UNIVERSITY OF IOWA	IOWA CITY IOWA	82	08-83	3	CTY	71,126	96,026
5	R01 GM26167-03 21320	LANKS, KARL W PROTEIN SYNTHESIS CONTROL IN NON-PROLIFERATING CELLS	DOWNSTATE MEDICAL CENTER	NEW YORK NEW YORK	82	12-82	0	CTY	53,070	84,010
5	R01 GM26234-03 22300	TILLACK, THOMAS W GLYCOLIPID LOCALIZATION IN LIPOSOMES AND MEMBRANES	UNIVERSITY OF VIRGINIA CHARLOTTESVILLE	CHARLOTTESVILLE VIRGINIA	82	11-82	0	CTY	43,500	63,075
5	R01 GM26520-03 21280	WOLSTENHOLME, DAVID R VARIANTS OF RAT MITOCHONDRIAL DNA	UNIVERSITY OF UTAH	SALT LAKE CITY UTAH	81	09-82	0	CTY	34,092	50,115

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2	R01 GM26713-04 22300	DOUGLAS, MICHAEL G POST TRANSLATIONAL MODIFICATION IN MEMBRANE BIOGENESIS	UNIVERSITY OF TEXAS HLTH SCI CTR SAN ANT	SAN ANTONIO TEXAS	82	07-83	2	CTY 40,641	54,984
3	R01 GM26717-03S1 21480	BLAU, HELEN M MUSCLE DIFFERENTIATION IN HETEROKARYONS	STANFORD UNIVERSITY	STANFORD CALIFORNIA	82	06-83	0	CTY 18,985	29,996
5	R01 GM26784-03 22250	REBHUN, LIONEL I ISOLATION AND CHARACTERIZATION OF MITOTIC ORGANELLES	UNIVERSITY OF VIRGINIA CHARLOTTESVILLE	CHARLOTTESVILLE VIRGINIA	81	12-82	0	CTY 56,394	80,421
5	R01 GM26803-03 21600	LEFFAK, IRA M CHROMATIN STRUCTURE AND REPLICATION	WRIGHT STATE UNIVERSITY	DAYTON OHIO	81	12-82	0	CTY 45,616	66,221
2	R01 GM26937-04 21320	BOURQUE, DON P MOLECULAR BIOLOGY OF CHLOROPLAST RIBOSOMES	UNIVERSITY OF ARIZONA	TUCSON ARIZONA	82	08-83	4	CTY 83,049	112,318
5	R01 GM27159-03 21320	RECHSTEINER, MARTIN C MICROINJECTION STUDIES ON PROTEIN DEGRADATION	UNIVERSITY OF UTAH	SALT LAKE CITY UTAH	82	12-82	2	CTY 54,533	79,073
3	R01 GM27159-03S1 21320	RECHSTEINER, MARTIN C MICROINJECTION STUDIES ON PROTEIN DEGRADATION	UNIVERSITY OF UTAH	SALT LAKE CITY UTAH	82	12-82	2	CTY 8,669	12,570
5	R01 GM27228-03 21600	CHALKLEY, ROGER G REPLICATION AND ACETYLATION OF HEPATOMA CHROMATIN	UNIVERSITY OF IOWA	IOWA CITY IOWA	82	12-82	0	CTY 68,085	93,957
5	R01 GM27236-03 21600	BHORJEE, JASWANT S HIGH AFFINITY PROTEINS IN CHROMOSOME ORGANIZATION	UNIVERSITY OF ILLINOIS CHICAGO CIRCLE	CHICAGO ILLINOIS	82	07-83	0	CTY 36,352	53,872
2	R01 GM27652-04 21700	PALATNIK, CARL M DEVELOPMENTALLY REGULATED MRNAS IN DICTYOSTELIUM	STATE UNIVERSITY NEW YORK STONY BROOK	STONY BROOK NEW YORK	82	06-83	2	CTY 95,392	133,267
5	R01 GM27692-02 21320	LOCKARD, RAYMOND E MESSENGER RNA STRUCTURE IN TRANSLATIONAL CONTROL	GEORGE WASHINGTON UNIVERSITY	WASHINGTON DIST OF COL	82	11-82	1	CTY 58,709	90,388
5	R01 GM27736-03 21600	LEVY, BEATRIZ W NUCLEOSOME STRUCTURE AND FUNCTION	UNIVERSITY OF CALIFORNIA IRVINE	IRVINE CALIFORNIA	82	02-83	0	CTY 52,336	67,940

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5	R01 GM27937-03 21600	LANGMORE, JOHN P CHROMOSOME STRUCTURE	UNIVERSITY OF MICHIGAN AT ANN ARBOR	ANN ARBOR MICHIGAN	82	03-83	0	CTY 57,483	90,823
5	R01 GM27950-03 21600	SEALE, RONALD L NUCLEOSOME-DNA INTERACTIONS IN CHROMATIN REPLICATION	SCRIPPS CLINIC AND RESEARCH FOUNDATION	LA JOLLA CALIFORNIA	82	02-83	1	CTY 101,700	167,703
5	R01 GM27968-03 21600	BURGOYNE, LEIGH A THE INTERNAL SPACE AND SURFACES OF EUKARYOTE NUCLEI	FLINDERS UNIVERSITY OF SOUTH AUSTRALIA	BEDFORD PARK AUSTRALIA	82	07-83	0	CTY 26,173	26,173
5	R01 GM28040-03 22300	MARTIN, CHARLES E THE ROLE OF STEROLS IN MEMBRANE FUNCTION	RUTGERS THE STATE UNIV NEW BRUNSWICK	NEW BRUNSWICK NEW JERSEY	82	08-83	0	CTY 37,404	57,999
5	R01 GM28097-03 21600	LODISH, HARVEY F CHROMATIN STRUCTURE IN DICTYOSTELIUM DISCOIDEUM	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	CAMBRIDGE MASSACHUSETTS	82	06-83	0	CTY 43,068	65,248
5	R01 GM28208-03 22200	COOPER, STEPHEN CAMP AND THE DIFFERENTIATION OF DICTYOSTELIUM DISCOIDEUM	UNIVERSITY OF MICHIGAN AT ANN ARBOR	ANN ARBOR MICHIGAN	82	07-83	0	CTY 41,360	65,349
5	R01 GM28349-03 21600	OLSON, MARK O NUCLEOLAR NONRIBOSOMAL, NONHISTONE PROTEINS	UNIVERSITY OF MISSISSIPPI MEDICAL CENTER	JACKSON MISSISSIPPI	82	06-83	0	CTY 69,900	91,295
1	R01 GM28559-01A1 22300	REDMAN, COLVIN M BIOGENESIS OF ERYTHROCTYE MEMBRANE PROTEINS	NEW YORK BLOOD CENTER	NEW YORK NEW YORK	82	08-83	2	CTY 67,019	97,497
5	R01 GM28657-02 22200	DAVID, JOHN D ROLE OF CELL SURFACE PROTEINS IN MYOGENESIS	UNIVERSITY OF MISSOURI COLUMBIA	COLUMBIA MISSOURI	82	11-82	1	CTY 39,863	54,014
5	R01 GM28799-02 22450	MILLER, KENNETH R THE STRUCTURE OF THE PHOTOSYNTHETIC MEMBRANE	BROWN UNIVERSITY	PROVIDENCE RHODE ISLAND	81	02-83	0	CTY 42,984	66,345
3	R01 GM28799-02S1 22450	MILLER, KENNETH R THE STRUCTURE OF THE PHOTOSYNTHETIC MEMBRANE	BROWN UNIVERSITY	PROVIDENCE RHODE ISLAND	82	02-83	0	CTY 21,242	34,399
5	R01 GM28817-15 21600	CHALKLEY, ROGER G STRUCTURE AND FUNCTION OF CHROMOSOMAL NUCLEOHISTONE	UNIVERSITY OF IOWA	IOWA CITY IOWA	82	04-83	1	CTY 80,313	110,832

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5	R01 GM28830-06 22250	HITCHCOCK, SARAH E MOLECULAR BIOLOGY OF REGULATION OF CONTRACTION	CARNEGIE-MELLON UNIVERSITY	PITTSBURGH PENNSYLVANIA	82	08-83	0	CTY 37,577	57,584
5	R01 GM28842-03 22200	KAUFMAN, STEPHEN J IMMUNOCHEMICAL ANALYSIS OF MYOBLAST DIFFERENTIATION	UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN	URBANA ILLINOIS	82	07-83	0	CTY 58,889	83,858
5	R01 GM28897-02 22300	TOSCANO, WILLIAM A, JR MECHANSISM OF CALCIUM STIMULATION OF ADENYLATE CYCLASE	HARVARD UNIVERSITY	BOSTON MASSACHUSETTS	82	03-83	1	CTY 72,200	126,312
5	R01 GM28932-02 22300	GOODENOUGH, DANIEL A MOLECULAR BIOLOGY OF ZONULAE OCCLUDENTES	HARVARD UNIVERSITY	BOSTON MASSACHUSETTS	82	03-83	1	CTY 58,753	113,250
5	R01 GM29054-03 21750	RUBIN, GERALD M CONTROL OF GENE EXPRESSION IN ANIMAL CELLS	CARNEGIE INSTITUTION OF WASHINGTON D C	BALTIMORE MARYLAND	82	08-83	1	CTY 79,078	130,584
5	R01 GM29241-03 22410	KANDUTSCH, ANDREW A DOLICHOL SYNTHESIS IN DIFFERENTIATION AND MALIGNANCY	JACKSON LABORATORY	BAR HARBOR MAINE	82	08-83	0	CTY 49,697	76,183
1	R01 GM29429-01 21600	OLINS, ADA L CHROMATIN STRUCTURE	UNIVERSITY OF TENNESSEE KNOXVILLE	KNOXVILLE TENNESSEE	82	08-83	2	CTY 55,310	85,197
1	R01 GM29442-01A1 21600	NELSON, DANIEL A ROLE OF HISTONE ACETYLATION IN GENE EXPRESSION	UNIVERSITY OF HOUSTON AT HOUSTON	HOUSTON TEXAS	82	06-83	2	CTY 67,850	81,865
5	R01 GM29490-02 21200	BENBOW, ROBERT M MOLECULAR MECHANISMS OF DNA REPLICATION IN XENOPUS LAEVI	JOHNS HOPKINS UNIVERSITY	BALTIMORE MARYLAND	82	07-83	3	CTY 78,586	117,879
1	R01 GM29496-01A1 HD 22250	TASH, JOSEPH S PROTEIN PHOSPHORYLATION IN SPERM FLAGELLAR MOTILITY	BAYLOR COLLEGE OF MEDICINE	HOUSTON TEXAS	82	06-83	2	CTY 75,856	100,446
5	R01 GM29723-02 22250	CLARKE, MARGARET CHEMISTRY AND FUNCTION OF DICTYOSTELIUM CALMODULIN	YESHIVA UNIVERSITY	NEW YORK NEW YORK	82	06-83	1	CTY 64,139	119,299
2	R01 GM29832-06A2 AG 21750	MARZLUFF, WILLIAM F, JR CONTROL OF HISTONE MRNA SYNTHESIS	FLORIDA STATE UNIVERSITY	TALLAHASSEE FLORIDA	82	06-83	2	CTY 82,062	114,130

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1	R01 GM29935-01 21600	GARRARD, WILLIAM T FUNCTION OF THE SUBUNITS OF EUKARYOTIC CHROMOSOMES	UNIVERSITY OF TEXAS HLTH SCI CTR DALLAS	DALLAS TEXAS	82	01-83	2	CTY	85,980	113,840
1	R01 GM30243-01A1 22300	KRIEGER, MONTY GENETIC ANALYSIS OF RECEPTOR-MEDIATED ENDOCYTOSIS	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	CAMBRIDGE MASSACHUSETTS	82	06-83	2	CTY	70,427	91,247
1	R01 GM30244-01 22300	SILBERT, DAVID F MEMBRANE LIPIDS-INTERACTIONS AND CONTROL OF BIOSYNTHESIS	WASHINGTON UNIVERSITY	SAINT LOUIS MISSOURI	82	01-83	3	CTY	92,209	136,324
1	R01 GM30245-01 22300	FISHER, PAUL A THE MOLECULAR BIOLOGY OF THE NUCLEAR ENVELOPE	ROCKEFELLER UNIVERSITY	NEW YORK NEW YORK	82	01-83	2	CTY	92,259	130,502
1	R01 GM30319-01A1 21600	SAUERBIER, WALTER TRANSCRIPTION OF UV-IRRADIATED DNA AND CHROMATIN	UNIVERSITY OF MINNESOTA OF MNPLS-ST PAUL	MINNEAPOLIS MINNESOTA	82	07-83	2	CTY	71,471	97,239
5	R01 GM30339-02 21600	WORCEL, ABRAHAM PROPERTIES OF DNA-PROTEIN COMPLEXES OF D.MELANOGASTER	UNIVERSITY OF ROCHESTER	ROCHESTER NEW YORK	82	11-82	0	CTY	56,256	96,418
1	R01 GM30445-01 21600	RECHSTEINER, MARTIN C INJECTION OF CHROMATIN COMPONENTS INTO MAMMALIAN CELLS	UNIVERSITY OF UTAH	SALT LAKE CITY UTAH	82	04-83	4	CTY	50,393	72,395
1	R01 GM30607-01 21310	HOUGH, PAUL V IN VITRO TRANSCRIPTION BY RNA POLYMERASE II	ASSOCIATED UNIV-BROOKHAVEN NATL LAB	UPTON NEW YORK	82	04-83	2	CTY	58,195	93,112
1	R01 GM30666-01 22300	POO, MU-MING BIOPHYSICAL STUDIES OF PROTEIN DIFFUSION IN MEMBRANES	UNIVERSITY OF CALIFORNIA IRVINE	IRVINE CALIFORNIA	82	04-83	2	CTY	112,714	133,705
1	R01 GM30756-01 CA 21700	O'FARRELL, PATRICK CELLULAR DETERMINANTS OF DEVELOPMENTAL STATE	UNIVERSITY OF CALIFORNIA SAN FRANCISCO	SAN FRANCISCO CALIFORNIA	82	04-83	2	CTY	75,853	97,644
1	R01 GM30814-01 22250	MURRAY, JOHN M STUDY OF MEMBRANE-CYTOSKELETON COMPLEXES	UNIVERSITY OF PENNSYLVANIA	PHILADELPHIA PENNSYLVANIA	82	06-83	2	CTY	82,867	114,822
1	R01 GM30982-01 22200	GOODENOUGH, URSULA W FERTILIZATION MECHANISMS IN CHLAMYDOMONAS	WASHINGTON UNIVERSITY	SAINT LOUIS MISSOURI	82	06-83	2	CTY	37,887	58,725

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1	R01 GM31060-01 21750	NISHIKURA, KAZUKO ROLE OF RNA PROCESSING IN CELL DIFFERENTIATION	WISTAR INSTITUTE OF ANATOMY AND BIOLOGY	PHILADELPHIA PENNSYLVANIA	82	07-83	2	CTY	80,000	124,400
1	R01 GM31226-01 21700	CHUNG, STEPHEN S CELL-CELL CONTACT REGULATED GENES IN DICTYOSTELIUM	UNIVERSITY OF ILLINOIS MEDICAL CENTER	CHICAGO ILLINOIS	82	06-83	2	CTY	59,036	93,277
1	R13 GM31250-01 GM 21320	BOTSTEIN, DAVID GORDON CONFERENCE ON BIOLOGICAL REGULATORY MECHANISMS	GORDON RESEARCH CONFERENCES	KINGSTON RHODE ISLAND	82	05-83	0	CTY	2,000	2,000
7	R01 GM31733-01 22400	JARRETT, HARRY W STRUCTURE-FUNCTION RELATIONSHIPS INVOLVING CALMODULIN	INDIANA UNIV-PURDUE UNIV AT INDIANAPOLIS	INDIANAPOLIS INDIANA	82	02-83	2	CTY	28,707	37,006
7	R01 GM32111-01 21480	DARLINGTON, GRETCHEN J ACTIVATION OF HUMAN HEPATIC GENES IN CELL HYBRIDS	BAYLOR COLLEGE OF MEDICINE	HOUSTON TEXAS	82	02-83	4	CTY	64,691	87,826
***	0	* CENTERS							0	0
***	87	NONCENTERS							5,891,367	8,480,458
***	87	TOTAL							5,891,367	8,480,458
5	R01 GM28398-03 12200	MARSH, DONALD J OSCILLATIONS IN ARTERIAL BLOOD PRESSURE	UNIVERSITY OF SOUTHERN CALIFORNIA	LOS ANGELES CALIFORNIA	82	08-83	0	CVB	77,411	115,899
***	0	* CENTERS							0	0
***	1	NONCENTERS							77,411	115,899
***	1	TOTAL							77,411	115,899

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5	R01 GM23696-06 13700	ROSENFELD, JOEL P MORPHINE AND NOCICEPTIVE BRAIN STIMULATION	NORTHWESTERN UNIVERSITY	EVANSTON ILLINOIS	82	02-83	2	DABR	33,659	46,449
***	0	* CENTERS							0	0
***	1	NONCENTERS							33,659	46,449
***	1	TOTAL							33,659	46,449
5	R01 GM24781-05 11780	MITCHELL, ALLEN A INTENSIVE DRUG SURVEILLANCE IN HOSPITALIZED CHILDREN	CHILDREN'S HOSPITAL MEDICAL CENTER	BOSTON MASSACHUSETTS	82	04-83	0	EDC	295,302	448,855
***	0	* CENTERS							0	0
***	1	NONCENTERS							295,302	448,855
***	1	TOTAL							295,302	448,855
2	R01 GM25888-04A1 AM 11790	O'BRIEN, THOMAS W CHLORAMPHENICOL-INDUCED APLASTIC ANEMIA	UNIVERSITY OF FLORIDA	GAINESVILLE FLORIDA	82	07-83	2	EH	58,236	85,607
5	R01 GM28928-02 22500	JOHNSON, MICHAEL L ANALYSIS OF MODELS OF HEMOGLOBIN ACTION	UNIVERSITY OF VIRGINIA	CHARLOTTESVILLE CHARLOTTESVILLE VIRGINIA	82	12-82	1	EH	24,346	35,302
***	0	* CENTERS							0	0
***	2	NONCENTERS							82,582	120,909
***	2	TOTAL							82,582	120,909

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5	R01 GM30720-02 / 13410	REESE, ANDY C / CIG FUNCTION: INTERACTION WITH FREE MACROPHAGES	MEDICAL COLLEGE OF GEORGIA	AUGUSTA	GEORGIA	82	07-83	0	EI	56,168	80,320
***	0	* CENTERS								0	0
***	1	NONCENTERS								56,168	80,320
***	1	TOTAL								56,168	80,320
5	R01 GM28825-09 / 11770	FELDMAN DAVID / THE ROLE OF RECEPTORS IN GLUCOCORTICOID ACTION	STANFORD UNIVERSITY	STANFORD	CALIFORNIA	82	08-83	2	END	68,211	115,277
***	0	* CENTERS								0	0
***	1	NONCENTERS								68,211	115,277
***	1	TOTAL								68,211	115,277
2	R01 GM20946-08 / 12820	DAVIS, FRANK F / NONIMMUNOGENIC ENZYMES FOR THERAPEUTIC USE	RUTGERS THE STATE UNIV NEW BRUNSWICK	NEW BRUNSWICK	NEW JERSEY	82	11-82	2	ET	111,088	161,019
2	R01 GM24129-06 / 22400	BENKOVIC, STEPHEN J / THE TRANSFORMYLASE ENZYMES	PENNSYLVANIA STATE UNIVERSITY UNIV PARK	UNIVERSITY PARK	PENNSYLVANIA	82	06-83	4	ET	114,661	147,929

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5	R01 GM26114-05 11760	SCHENKMAN, JOHN B INDUCTION AND MODE OF ACTION OF HEPATIC DRUG OXIDASE	UNIVERSITY OF CONNECTICUT HEALTH CENTER	FARMINGTON	CONNECTICUT	82	05-83	0	ET	121,207	175,300
***	0	* CENTERS								0	0
***	3	NONCENTERS								346,956	484,248
***	3	TOTAL								346,956	484,248
5	R01 GM13235-18 21750	BERG, PAUL MECHANISMS AND REGULATION OF GENE EXPRESSION	STANFORD UNIVERSITY	STANFORD	CALIFORNIA	82	08-83	2	EVR	200,827	333,815
5	R01 GM13280-19 21320	DOERMANN, AUGUST H INVESTIGATION OF GENETIC PROBLEMS WITH BACTERIOPHAGES	UNIVERSITY OF WASHINGTON	SEATTLE	WASHINGTON	82	12-82	0	EVR	128,583	170,397
5	R01 GM18842-10 21200	KARAM, JIM D GENETIC CONTROL OF PHAGE T4 DNA REPLICATION	MEDICAL UNIVERSITY OF SOUTH CAROLINA	CHARLESTON	SOUTH CAROLINA	82	03-83	1	EVR	52,185	67,587
5	R01 GM23853-06 21320	PAOLETTI, ENZO VACCINIA RNA SYNTHESIS: A MODEL FOR MRNA BIOGENESIS	NEW YORK STATE DEPARTMENT OF HEALTH	ALBANY	NEW YORK	82	03-83	0	EVR	60,557	92,068
5	R01 GM26147-04 21750	CHRISTENSEN, JAMES R MECHANISM BY WHICH N GENE OF LAMBDA EXCLUDES PHAGE T1	UNIVERSITY OF ROCHESTER	ROCHESTER	NEW YORK	82	07-83	0	EVR	31,779	52,435
5	R01 GM27099-03 21280	YOUNG, RYLAND F CONTROL OF VIRUS-INDUCED CELL LYSIS	TEXAS AGRI AND MECH UNIV	COLLEGE STATION COLLEGE STATION	TEXAS	82	12-82	0	EVR	46,930	60,540
1	R01 GM30636-01 AI 21750	JONES, NICHOLAS C THE MECHANISM AND REGULATION OF RNA SPLICING	PURDUE UNIVERSITY WEST LAFAYETTE	WEST LAFAYETTE	INDIANA	82	04-83	2	EVR	57,000	76,600

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1	R01 GM30864-01 AI 21600	DANIELL, ELLEN CHROMATIN PROTEINS: EFFECT ON TRANSCRIPTION IN VITRO	UNIVERSITY OF CALIFORNIA	BERKELEY BERKELEY	CALIFORNIA	82	06-83	1	EVR 38,610	54,788
1	R01 GM31253-01 21200	SUBRAMANI, SURESH MECHANISMS FOR GENETIC RECOMBINATION IN MAMMALIAN CELLS	UNIVERSITY OF CALIFORNIA	SAN DIEGO LA JOLLA	CALIFORNIA	82	06-83	2	EVR 65,967	82,837
1	R01 GM31698-01 22410	STURMAN, LAWRENCE S CORONAVIRUS GLYCOPROTEINS AND GLYCOSAMINOGLYCANS	NEW YORK STATE DEPARTMENT OF HEALTH	ALBANY	NEW YORK	82	06-83	2	EVR 70,424	93,764
***	0	* CENTERS							0	0
***	10	NONCENTERS							752,862	1,084,831
***	10	TOTAL							752,862	1,084,831
5	R01 GM07495-20 13700	MC GILL, THOMAS E THE GENETICS AND PHYSIOLOGY OF BEHAVIORAL DIFFERENCES	WILLIAMS COLLEGE	WILLIAMSTOWN	MASSACHUSETTS	81	02-83	0	EXP 52,182	78,763
***	0	* CENTERS							0	0
***	1	NONCENTERS							52,182	78,763
***	1	TOTAL							52,182	78,763

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5 R13	GM30337-03 21700	HICKS, JAMES B BACTERIAL GENETICS	COLD SPRING HARBOR LABORATORY	COLD SPRING HARB NEW YORK	82	04-83	0	GBD 30,735	30,735
***	0	* CENTERS						0	0
***	1	NONCENTERS						30,735	30,735
***	1	TOTAL						30,735	30,735
2 R01	GM07779-20 21700	NANNEY, DAVID L GENETIC STUDIES WITH TETRAHYMENA	UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN	URBANA ILLINOIS	82	02-83	4	GEN 106,845	151,087
5 R01	GM07816-23 21250	STRAUSS, BERHARD S STUDY MODE OF ACTION OF CHEMICAL MUTAGENS	UNIVERSITY OF CHICAGO	CHICAGO ILLINOIS	82	11-82	1	GEN 81,616	126,997
5 R01	GM08995-21 21750	METZENBERG, ROBERT L, JR THE GENETIC CONTROL OF PROTEIN SYNTHESIS	UNIVERSITY OF WISCONSIN MADISON	MADISON WISCONSIN	82	12-82	1	GEN 59,405	83,518
2 R01	GM09541-21 21750	GILBERT, WALTER ROLE OF RIBONUCLEIC ACID IN PROTEIN SYNTHESIS	HARVARD UNIVERSITY	CAMBRIDGE MASSACHUSETTS	82	07-83	1	GEN 232,291	357,728
5 R01	GM09886-21 21700	CHOVNICK, ARTHUR GENETIC STUDIES IN DROSOPHILA MELANOGASTER	UNIVERSITY OF CONNECTICUT STORRS	STORRS CONNECTICUT	82	03-83	1	GEN 142,608	218,909
2 R01	GM09965-19 21700	SANDLER, LAURENCE M CYTOGENETICS OF MEIOSIS AND DEVELOPMENT IN DROSOPHILA	UNIVERSITY OF WASHINGTON	SEATTLE WASHINGTON	82	11-82	4	GEN 50,501	67,621
5 R01	GM10499-18 21600	GAY, HELEN CHROMOSOME STRUCTURE IN RELATION TO GENE ACTION	UNIVERSITY OF MICHIGAN AT ANN ARBOR	ANN ARBOR MICHIGAN	80	06-83	0	GEN 39,449	62,329

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5	R01 GM11726-19 21280	ATTARDI, GIUSEPPE GENE EXPRESSION AND CONTENT IN CELL DIFFERENTIATION	CALIFORNIA INSTITUTE OF TECHNOLOGY	PASADENA CALIFORNIA	82	12-82	1	GEN	240,278	354,171
5	R01 GM11895-19 21750	HALL, BENJAMIN D EXPRESSION AND REGULATION OF CYTOCHROME C GENES	UNIVERSITY OF WASHINGTON	SEATTLE WASHINGTON	82	04-83	2	GEN	100,237	133,539
5	R01 GM11899-19 21750	MC FALL, ELIZABETH STUDIES ON CONTROL MECHANISMS IN ENZYME BIOSYNTHESIS	NEW YORK UNIVERSITY	NEW YORK NEW YORK	82	12-82	2	GEN	76,485	114,031
5	R01 GM12702-18 21750	SHERMAN, FRED GENETIC CONTROL OF CYTOCHROME C IN YEAST	UNIVERSITY OF ROCHESTER	ROCHESTER NEW YORK	82	12-82	1	GEN	163,194	242,644
5	R01 GM12953-32 21700	SRB, ADRIAN M DEVELOPMENTAL GENETIC STUDIES OF NEUROSPORA	CORNELL UNIVERSITY ITHACA	ITHACA NEW YORK	81	11-82	0	GEN	38,492	55,167
5	R01 GM13221-18 21200	MOSIG, GISELA DNA REPLICATION AND RECOMBINATION IN BACTERIOPHAGE	VANDERBILT UNIVERSITY	NASHVILLE TENNESSEE	82	08-83	0	GEN	93,945	148,537
5	R01 GM13631-17 21250	LEFEVRE, GEORGE, JR COMPARATIVE STUDIES ON INDUCED MUTATION IN DROSOPHILA	CALIFORNIA STATE UNIVERSITY NORTHRIDGE	NORTHRIDGE CALIFORNIA	82	11-82	0	GEN	78,198	108,695
5	R01 GM15691-15 21700	LUCCHESI, JOHN C GENETIC REGULATION IN DROSOPHILA: DOSAGE COMPENSATION	UNIVERSITY OF NORTH CAROLINA CHAPEL HILL	CHAPEL HILL NORTH CAROLINA	82	08-83	1	GEN	106,302	144,039
5	R01 GM15761-14 22300	SLAYMAN, CAROLYN W GENETIC STUDY OF ION TRANSPORT IN NEUROSPORA	YALE UNIVERSITY	NEW HAVEN CONNECTICUT	82	03-83	1	GEN	71,391	112,798
5	R01 GM15883-18 21400	PIOUS, DONALD A GENETIC STRUCTURE AND FUNCTION IN HUMAN CELLS	UNIVERSITY OF WASHINGTON	SEATTLE WASHINGTON	82	01-83	0	GEN	90,923	121,746
5	R01 GM15886-16 21600	COMINGS, DAVID E PHYSIOLOGY AND BIOCHEMISTRY OF HUMAN CHROMOSOMES	CITY OF HOPE NATIONAL MEDICAL CENTER	DUARTE CALIFORNIA	82	11-82	2	GEN	90,867	130,667
5	R01 GM16074-14 21800	ENFIELD, FRANKLIN D INVESTIGATIONS IN QUANTITATIVE GENETICS	UNIVERSITY OF MINNESOTA OF MNPLS-ST PAUL	MINNEAPOLIS MINNESOTA	82	08-83	0	GEN	56,000	76,160

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5	R01 GM16536-14 21250	HINTON, CLAUDE W CHROMOSOME BEHAVIOR IN DROSOPHILA	COLLEGE OF WOOSTER	WOOSTER	OHIO	82	12-82	2	GEN		15,062	22,387
5	R01 GM17020-14 21320	CHAMPE, SEWELL P GENETIC CONTROL OF DEVELOPMENT IN MODEL SYSTEMS	RUTGERS THE STATE UNIV NEW BRUNSWICK	NEW BRUNSWICK	NEW JERSEY	82	04-83	0	GEN		77,035	121,715
5	R01 GM17132-14 22250	LUCK, DAVID J BIOCHEMICAL GENETICS OF MICROTUBULES	ROCKEFELLER UNIVERSITY	NEW YORK	NEW YORK	82	08-83	2	GEN		119,388	187,439
2	R01 GM17317-13 21200	FOGEL, SEYMOUR RECOMBINATION--DNA SYNTHESIS AND DEVELOPMENT IN YEAST	UNIVERSITY OF CALIFORNIA BERKELEY	BERKELEY	CALIFORNIA	82	04-83	4	GEN		86,932	112,734
5	R01 GM18080-09 21700	HILLMAN, RALPH GENETIC TRANSLATION AS A CELLULAR CONTROL MECHANISM	TEMPLE UNIVERSITY	PHILADELPHIA	PENNSYLVANIA	81	02-83	0	GEN		42,500	61,425
5	R01 GM18476-09 21700	KATZ, EUGENE R DEVELOPMENTAL GENETIC STUDIES ON CELLULAR SLIME MOLDS	STATE UNIVERSITY NEW YORK STONY BROOK	STONY BROOK	NEW YORK	81	04-83	0	GEN		60,395	85,907
2	R01 GM18541-11 22250	BYERS, BRECK E MOLECULAR CYTOLOGY OF THE CELL CYCLE	UNIVERSITY OF WASHINGTON	SEATTLE	WASHINGTON	82	05-83	4	GEN		90,205	120,039
5	R01 GM18586-11 21750	SALSER, WINSTON A NUCLEOTIDE SEQUENCING METHODS FOR ONCOGENIC VIRUSES	UNIVERSITY OF CALIFORNIA LOS ANGELES	LOS ANGELES	CALIFORNIA	82	02-83	2	GEN		75,140	97,968
5	R01 GM18678-12 21600	NOVITSKI, EDWARD THE SYNTHESIS AND ANALYSIS OF CHROMOSOMES	UNIVERSITY OF OREGON	EUGENE	OREGON	82	08-83	1	GEN		58,322	84,042
5	R01 GM18926-11 21600	FANGMAN, WALTON L EUKARYOTIC CHROMOSOME STRUCTURE AND REPLICATION	UNIVERSITY OF WASHINGTON	SEATTLE	WASHINGTON	82	12-82	3	GEN		112,505	149,898
5	R01 GM18969-11 21700	BRUMBAUGH, JOHN A MECHANISMS MEDIATING MELANOGENIC CONTROL GENE EFFECTS	UNIVERSITY OF NEBRASKA LINCOLN	LINCOLN	NEBRASKA	82	04-83	0	GEN		66,670	92,005
5	R01 GM19175-11 21700	MANNEY, THOMAS R GENE FUNCTIONS ASSOCIATED WITH MATING IN YEAST	KANSAS STATE UNIVERSITY	MANHATTAN	KANSAS	82	11-82	0	GEN		59,268	83,598

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5	R01 GM19179-11 21600	LAIRD, CHARLES D CHROMOSOME STRUCTURE AND FUNCTION	UNIVERSITY OF WASHINGTON	SEATTLE	WASHINGTON	82	02-83	2	GEN	75,753	100,179
5	R01 GM19194-11 21600	TARTOF, KENNETH D STRUCTURE AND FUNCTION OF GENES	INSTITUTE FOR CANCER RESEARCH	PHILADELPHIA	PENNSYLVANIA	82	04-83	2	GEN	109,635	166,795
2	R01 GM19242-11 21700	WRIGHT, THEODORE R ONTOGENY AND GENETIC CONTROL OF ENZYME ACTIVITY	UNIVERSITY OF VIRGINIA	CHARLOTTESVILLE CHARLOTTESVILLE	VIRGINIA	82	04-83	4	GEN	138,054	198,378
2	R01 GM19290-10A1 21700	ORIAS, EDUARDO CONDITIONAL LETHAL MUTANTS OF TETRAHYMENA	UNIVERSITY OF CALIFORNIA	SANTA BARBARA SANTA BARBARA	CALIFORNIA	82	03-83	3	GEN	69,074	90,165
2	R01 GM19582-10 21600	MAGUIRE, MARJORIE P CHROMOSOME STRUCTURES AND MEIOTIC MECHANISMS	UNIVERSITY OF TEXAS AUSTIN	AUSTIN	TEXAS	82	01-83	2	GEN	15,737	21,245
5	R01 GM19607-10 21280	BIRKY, C WILLIAM, JR MECHANISMS OF ORGANELLE TRANSMISSION GENETICS	OHIO STATE UNIVERSITY	COLUMBUS	OHIO	82	07-83	1	GEN	89,175	122,170
5	R01 GM19629-11 22300	HENRY, SUSAN A GENETICS AND DEVELOPMENT OF YEAST MEMBRANE MUTANTS	YESHIVA UNIVERSITY	NEW YORK	NEW YORK	82	08-83	3	GEN	127,620	232,213
2	R01 GM19770-10 21800	HIRAIZUMI, YUICHIRO MALE RECOMBINATION-MUTATOR SYSTEM IN DROSOPHILA	UNIVERSITY OF TEXAS AUSTIN	AUSTIN	TEXAS	82	03-83	2	GEN	90,130	120,453
5	R01 GM19851-11 22200	HIRSH, DAVID I GENETIC CONTROL OF DEVELOPMENT	UNIVERSITY OF COLORADO AT BOULDER	BOULDER	COLORADO	82	08-83	2	GEN	156,574	219,047
5	R01 GM19934-20 21700	KALLMAN, KLAUS D THE GENETIC CONTROL OF SEXUAL MATURITY IN FISH	NEW YORK ZOOLOGICAL SOCIETY	NEW YORK	NEW YORK	82	06-83	0	GEN	39,764	80,615
5	R01 GM19937-10 21700	FRISTROM, JAMES W GENIC/MOLECULAR BASIS OF IMAGINAL DISC MORPHOGENESIS	UNIVERSITY OF CALIFORNIA	BERKELEY BERKELEY	CALIFORNIA	82	12-82	0	GEN	82,296	107,033
5	R01 GM20056-10 21700	HABER, JAMES E CONTROL OF CELL TYPE AND GAMETOGENESIS	BRANDEIS UNIVERSITY	WALTHAM	MASSACHUSETTS	82	12-82	3	GEN	78,159	125,874

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5	R01 GM20069-10 21750	SMITHIES, OLIVER GENETIC CONTROL OF PROTEIN STRUCTURE AND SYNTHESIS	UNIVERSITY OF WISCONSIN	MADISON MADISON WISCONSIN	82	12-82	0	GEN		168,300	238,519
5	R01 GM20158-10 21600	HOGNESS, DAVID S THE ARRANGEMENT OF INFORMATION IN ANIMAL CHROMOSOMES	STANFORD UNIVERSITY	STANFORD CALIFORNIA	82	01-83	0	GEN		124,856	191,820
2	R01 GM20293-10 21800	NEI, MASATOSHI THEORETICAL POPLUATION GENETICS AND ITS APPLICATIONS	UNIVERSITY OF TEXAS HLTH SCI CTR HOUSTON	HOUSTON TEXAS	82	01-83	4	GEN		61,810	85,298
5	R01 GM20401-09 21700	POODRY, CLIFTON A GENETIC CONTROL OF DEVELOPMENT, USING DROSOPHILA	UNIVERSITY OF CALIFORNIA SANTA CRUZ	SANTA CRUZ CALIFORNIA	82	06-83	0	GEN		60,754	79,588
5	R01 GM20427-10 21320	NOMURA, MASAYASU GENETICS AND BIOCHEMISTPY OF RIBOSOME BIOSYNTHESIS	UNIVERSITY OF WISCONSIN MADISON	MADISON WISCONSIN	82	05-83	0	GEN		181,964	255,827
5	R01 GM20700-08 21480	CROCE, CARLO M ENZYME MARKERS IN THE MAPPING OF HUMAN GENES	WISTAR INSTITUTE OF ANATOMY AND BIOLOGY	PHILADELPHIA PENNSYLVANIA	82	11-82	0	GEN		72,097	111,532
5	R01 GM20868-09 21750	BOURGEOIS-COHN, SUZANNE STUDIES OF REGULATION IN E. COLI EXTENDED TO LYMPHOMAS	SALK INSTITUTE FOR BIOLOGICAL STUDIES	LA JOLLA CALIFORNIA	82	11-82	1	GEN		137,668	223,022
5	R01 GM21020-06 21600	MILLER, OSCAR L, JR ULTRA STRUCTURAL STUDIES OF GENETIC ACTIVITY	UNIVERSITY OF VIRGINIA CHARLOTTESVILLE	CHARLOTTESVILLE VIRGINIA	82	11-82	0	GEN		80,090	116,131
5	R01 GM21119-09 21320	GUTHRIE, CHRISTINE BIOSYNTHESIS OF TRANSFER RNAS	UNIVERSITY OF CALIFORNIA SAN FRANCISCO	SAN FRANCISCO CALIFORNIA	82	01-83	2	GEN		87,139	113,689
5	R01 GM21121-09 21600	LATT, SAMUEL A PROTEIN-DNA INTERACTIONS IN HUMAN CHROMOSOMES	CHILDREN'S HOSPITAL MEDICAL CENTER	BOSTON MASSACHUSETTS	82	01-83	1	GEN		125,547	200,773
5	R01 GM21133-07 21800	KOEHN, RICHARD K GENETICS AND EVOLUTION OF PHYSIOLOGICAL VARIATION	STATE UNIVERSITY NEW YORK STONY BROOK	STONY BROOK NEW YORK	82	03-83	2	GEN		59,543	87,916
5	R01 GM21135-09 21800	EWENS, WARREN J STOCHASTIC PROCESSES IN GENETIC POPULATIONS	UNIVERSITY OF PENNSYLVANIA	PHILADELPHIA PENNSYLVANIA	82	06-83	0	GEN		14,212	23,450

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5	R01 GM21137-08 21700	KIGER, JOHN A, JR GENETIC STUDIES OF CYCLIC NUCLEOTIDE METABOLISM	UNIVERSITY OF CALIFORNIA	DAVIS DAVIS	82 CALIFORNIA	03-83	3	GEN	75,053	97,730
2	R01 GM21179-09 21800	LEWONTIN, RICHARD C GENETIC VARIATION OF PROTEINS IN NATURAL POPULATIONS	HARVARD UNIVERSITY	CAMBRIDGE	82 MASSACHUSETTS	02-83	4	GEN	129,584	192,867
5	R01 GM21253-08 21700	BOTSTEIN, DAVID MOLECULAR GENETICS OF MORPHOGENETIC PATHWAYS	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	CAMBRIDGE	82 MASSACHUSETTS	05-83	1	GEN	84,979	133,596
5	R01 GM21473-08 21400	HALL, JEFFREY C NEUROGENETICS OF DROSOPHILA REPRODUCTIVE BEHAVIOR	BRANDEIS UNIVERSITY	WALTHAM	82 MASSACHUSETTS	11-82	0	GEN	45,201	71,056
5	R01 GM21487-06 21600	HARFORD, A GAYLER NATURAL CORRECTION OF GENE DEFICIENCIES	STATE UNIVERSITY OF NEW YORK AT BUFFALO	BUFFALO	80 NEW YORK	06-83	0	GEN	59,702	86,625
5	R01 GM21498-08 21600	BRUTLAG, DOUGLAS L STRUCTURE OF PERICENTRIC HETEROCHROMATIN	STANFORD UNIVERSITY	STANFORD	82 CALIFORNIA	03-83	3	GEN	75,736	115,693
5	R01 GM21510-08 21200	NEWLON, CAROL S DNA REPLICATION IN SACCHAROMYCES CEREVISIAE	UNIVERSITY OF IOWA	IOWA CITY	82 IOWA	11-82	2	GEN	82,081	112,702
5	R01 GM21548-08 21700	POSTLETHWAIT, JOHN H GENE AND HORMONE CONTROL OF DROSPHILA EGG PROTEINS	UNIVERSITY OF OREGON	EUGENE	82 OREGON	11-82	2	GEN	62,847	85,346
5	R01 GM21626-08 21600	WENSINK, PIETER C SEQUENCE ARRANGEMENT IN EUKARYOTIC DNA & CHROMOSOMES	BRANDEIS UNIVERSITY	WALTHAM	82 MASSACHUSETTS	11-82	0	GEN	66,072	107,037
5	R01 GM21734-08 21700	FREELING, MICHAEL DEVELOPMENTAL GENETICS WITH AN INDUCIBLE GENE SYSTEM	UNIVERSITY OF CALIFORNIA	BERKELEY BERKELEY	82 CALIFORNIA	01-83	3	GEN	72,484	94,489
5	R01 GM21793-08 21600	GOROVSKY, MARTIN A REPEATED GENES: ORGANIZATION, EVOLUTION AND FUNCTION	UNIVERSITY OF ROCHESTER	ROCHESTER	82 NEW YORK	01-83	2	GEN	112,888	194,205
5	R01 GM21809-08 21700	KESSIN, RICHARD H CONTROL OF AGGREGATION IN D. DISCOIDEUM	HARVARD UNIVERSITY	CAMBRIDGE	82 MASSACHUSETTS	01-83	0	GEN	60,869	93,198

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5	R01 GM21841-08 22200	THORNER, JEREMY W CELL-CELL INTERACTIONS OF A SIMPLE EUKARYOTE	UNIVERSITY OF CALIFORNIA	BERKELEY BERKELEY	82 CALIFORNIA	12-82	1	GEN	85,033	111,393
5	R01 GM21874-08 21750	PARDUE, MARY L GENE FUNCTION ANALYSIS BY POLYTENE CHROMOSOMES	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	CAMBRIDGE	82 MASSACHUSETTS	01-83	2	GEN	99,284	155,132
5	R01 GM21993-07 13700	LYNCH, CAROL B GENETIC ANALYSIS OF BEHAVIORAL THERMOREGULATION	WESLEYAN UNIVERSITY	MIDDLETOWN	81 CONNECTICUT	03-83	0	GEN	49,760	69,907
3	R01 GM21993-0751 13700	LYNCH, CAROL B GENETIC ANALYSIS OF BEHAVIORAL THERMOREGULATION	WESLEYAN UNIVERSITY	MIDDLETOWN	82 CONNECTICUT	03-83	0	GEN	22,083	36,063
5	R01 GM22138-08 21600	BLUMENFELD, MARTIN S SATELLITE DNA AND MOLECULAR ORGANIZATION OF CHROMOSOMES	UNIVERSITY OF MINNESOTA OF MNPLS-ST PAUL	MINNEAPOLIS	82 MINNESOTA	12-82	1	GEN	76,223	101,755
5	R01 GM22232-08 21200	CARROLL, DANA DEVELOPMENTAL CONTROL AND EVOLUTION OF 5S RNA GENES	UNIVERSITY OF UTAH	SALT LAKE CITY	82 UTAH	05-83	1	GEN	80,891	115,762
5	R01 GM22274-08 21750	MESELSON, MATTHEW S NUCLEAR AND MESSENGER RNA OF DROSOPHILA	HARVARD UNIVERSITY	CAMBRIDGE	82 MASSACHUSETTS	06-83	2	GEN	178,328	273,549
2	R01 GM22341-07 21700	KAUFFMAN, STUART A SEQUENTIAL DEVELOPMENTAL COMMITMENTS IN DROSOPHILA	UNIVERSITY OF PENNSYLVANIA	PHILADELPHIA	82 PENNSYLVANIA	05-83	2	GEN	83,508	135,058
5	R01 GM22395-08 21750	BROWN, DONALD D THE DUAL 5S RNA GENE SYSTEM IN XENOPUS	CARNEGIE INSTITUTION OF WASHINGTON D C	BALTIMORE	82 MARYLAND	08-83	2	GEN	123,513	192,296
2	R01 GM22523-07 21800	WADE, MICHAEL J GENETICAL CONSEQUENCES OF EXTINCTION DISPERSION	UNIVERSITY OF CHICAGO	CHICAGO	82 ILLINOIS	08-83	2	GEN	41,413	63,478
5	R01 GM22714-08 22300	KUNG, CHING GENETIC AND BIOCHEMICAL STUDIES OF PARAMECIUM BEHAVIOR	UNIVERSITY OF WISCONSIN MADISON	MADISON	82 WISCONSIN	04-83	2	GEN	146,338	204,324
2	R01 GM22731-07 21700	STREISINGER, GEORGE GENETIC STUDIES WITH ZEBRA FISH (BRACHYDANIO RERIO)	UNIVERSITY OF OREGON	EUGENE	82 OREGON	02-83	4	GEN	154,759	205,479

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5	R01 GM22733-07 21320	SCANDALIOS, JOHN G CONTROL OF GENE EXPRESSION IN EUKARYOTE DEVELOPMENT	NORTH CAROLINA STATE UNIVERSITY	RALEIGH RALEIGH	82 NORTH CAROLINA	07-83	1	GEN	47,142	65,999
5	R01 GM22870-06 21100	BENDICH, ARNOLD J REPEATED DNA SEQUENCES AND LAND PLANT EVOLUTION	UNIVERSITY OF WASHINGTON	SEATTLE	81 WASHINGTON	11-82	0	GEN	71,556	95,375
5	R01 GM22968-07 21280	SURZYCKI, STEFAN J TRANSCRIPTION OF CHLOROPLAST DNA OF C. REINHARDI	INDIANA UNIVERSITY BLOOMINGTON	BLOOMINGTON INDIANA	82	07-83	0	GEN	47,281	68,557
5	R01 GM23007-05 21800	THROCKMORTON, LYNN H PROTEIN DIFFERENTIATION IN DROSOPHILA	UNIVERSITY OF CHICAGO	CHICAGO ILLINOIS	80	03-83	0	GEN	88,263	132,812
3	R01 GM23007-05S1 21800	THROCKMORTON, LYNN H PROTEIN DIFFERENTIATION IN DROSOPHILA	UNIVERSITY OF CHICAGO	CHICAGO ILLINOIS	81	03-83	0	GEN	6,902	12,216
5	R01 GM23224-07 21200	CHAMPOUX, JAMES J STRAND SEPARATION IN DNA REPLICATION	UNIVERSITY OF WASHINGTON	SEATTLE WASHINGTON	82	07-83	0	GEN	69,680	93,031
3	R01 GM23259-06S1 21750	NILES, EDWARD G SPECIFIC SYNTHESIS AND PROCESSING OF RRNA IN VITRO	STATE UNIVERSITY OF NEW YORK AT BUFFALO	BUFFALO NEW YORK	82	07-83	0	GEN	6,928	10,131
3	R01 GM23259-06S2 21750	NILES, EDWARD G SPECIFIC SYNTHESIS AND PROCESSING OF RRNA IN VITRO	STATE UNIVERSITY OF NEW YORK AT BUFFALO	BUFFALO NEW YORK	82	07-83	0	GEN	17,320	25,328
2	R01 GM23338-07 21600	CARPENTER, ADELAIDE T EM OF RECOMBINATION MUTANTS IN DROSOPHILA	UNIVERSITY OF CALIFORNIA SAN DIEGO	LA JOLLA CALIFORNIA	82	06-83	4	GEN	79,896	105,845
5	R01 GM23345-07 21700	BAKER, BRUCE S GENETICS OF MEIOSIS AND DEVELOPMENT IN DROSOPHILA	UNIVERSITY OF CALIFORNIA SAN DIEGO	LA JOLLA CALIFORNIA	82	06-83	0	GEN	115,325	153,249
5	R01 GM23349-06 22200	YUND, MARY A HORMONAL REGULATION OF GENE ACTIVITY IN DROSOPHILA	UNIVERSITY OF CALIFORNIA BERKELEY	BERKELEY CALIFORNIA	82	03-83	0	GEN	67,080	87,875
2	R01 GM23367-06 21750	MARZLUF, GEORGE A REGULATION OF GENE EXPRESSION IN NEUROSPORA	OHIO STATE UNIVERSITY	COLUMBUS OHIO	82	12-82	4	GEN	65,679	86,724

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5	R01 GM23456-05 21310	NISHIURA, JAMES T GENETICS AND BIOCHEMISTRY OF EUKARYOTIC RNA POLYMERASES	BROOKLYN COLLEGE	NEW YORK	NEW YORK	82	12-82	1	GEN 20,801	33,614
5	R01 GM23468-06 21700	CLINE, THOMAS W REGULATION OF SEX-SPECIFIC GENES IN DROSOPHILA	PRINCETON UNIVERSITY	PRINCETON	NEW JERSEY	82	12-82	2	GEN 60,601	97,866
2	R01 GM23504-06 21800	JOHNSON, GEORGE B STUDIES OF HIDDEN ELECTROPHORETIC VARIATION	WASHINGTON UNIVERSITY	SAINT LOUIS	MISSOURI	82	08-83	2	GEN 72,042	111,115
5	R01 GM23522-06 21320	GELBART, WILLIAM M GENETIC CONTROL OF DROSOPHILA ACETYLCHOLINESTERASE	HARVARD UNIVERSITY	CAMBRIDGE	MASSACHUSETTS	82	12-83	0	GEN 43,464	64,420
5	R01 GM23550-06 21800	PIECZENIK, GEORGE GENOTYPIC SELECTION: MAPPING SYNTAX-STRUCTURE-FUNCTION	RUTGERS THE STATE UNIV NEW BRUNSWICK	NEW BRUNSWICK	NEW JERSEY	82	08-83	0	GEN 36,186	54,421
5	R01 GM23562-06 21320	SCHIMMEL, PAUL R GENETIC APPROACHES TO PROTEIN-NUCLEIC ACIDS INTERACTIONS	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	CAMBRIDGE	MASSACHUSETTS	82	02-83	0	GEN 52,591	80,153
5	R01 GM23605-05 21750	KRIDER, HALLIE M BRDU EFFECTS ON THE RIBOSOMAL DNA OF DROSOPHILA	UNIVERSITY OF CONNECTICUT STORRS	STORRS	CONNECTICUT	82	12-82	3	GEN 49,706	75,607
5	R01 GM23617-06 21700	BEWLEY, GLENN C REGULATION OF GENE EXPRESSION DURING DEVELOPMENT	NORTH CAROLINA STATE UNIVERSITY RALEIGH	RALEIGH	NORTH CAROLINA	82	12-82	0	GEN 47,433	66,406
5	R01 GM23707-05 21700	BAKER, WILLIAM K GENETIC CONTROL OF DIFFERENTIAL CELL FUNCTION	UNIVERSITY OF UTAH	SALT LAKE CITY	UTAH	81	12-82	0	GEN 38,480	56,566
5	R01 GM23736-06 21320	FINNERTY, VICTORIA M REGULATION OF GENE EXPRESSION IN DROSOPHILA	CLARK COLLEGE	ATLANTA	GEORGIA	82	03-83	1	GEN 79,222	118,333
2	R01 GM23967-04A1 21750	KINSEY, JOHN A GENETIC STUDIES OF GLUTAMATE DEHYDROGENASE MUTANTS	UNIVERSITY OF KANSAS COL HLTH SCI & HOSP	KANSAS CITY	KANSAS	82	08-83	2	GEN 65,800	79,561
5	R01 GM24040-05 21700	MILLS, DALLICE I GENE EXPRESSION DURING MEIOSIS	OREGON STATE UNIVERSITY	CORVALLIS	OREGON	81	08-83	0	GEN 53,767	69,897

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5	R01 GM24110-06 21600	PETES, THOMAS D YEAST CHROMOSOME STRUCTURE AND REPLICATION	UNIVERSITY OF CHICAGO	CHICAGO ILLINOIS	82	07-83	2	GEN	86,494	142,035
5	R01 GM24185-06 21700	PETRI, WILLIAM H CONTROL OF DIFFERENTIATION: DROSOPHILA CHORION GENES	BOSTON COLLEGE	CHESTNUT HILL MASSACHUSETTS	82	08-83	0	GEN	58,552	86,071
5	R01 GM24189-06 21320	LIEBMAN, SUSAN W NONSENSE SUPPRESSION AND ANTISUPPRESSION IN YEAST	UNIVERSITY OF ILLINOIS CHICAGO CIRCLE	CHICAGO ILLINOIS	82	07-83	2	GEN	37,365	56,421
5	R01 GM24299-06 21700	KAUFMAN, THOMAS C THE GENETIC CONTROL OF MORPHOGENESIS IN DROSOPHILA	INDIANA UNIVERSITY BLOOMINGTON	BLOOMINGTON INDIANA	82	07-83	0	GEN	68,263	98,981
5	R01 GM24430-05 21600	GRAINGER, ROBERT M FUNCTIONAL ORGANIZATION OF A PURIFIED EUKARYOTIC GENE	UNIVERSITY OF VIRGINIA CHARLOTTESVILLE	CHARLOTTESVILLE VIRGINIA	82	12-82	1	GEN	74,095	104,738
5	R01 GM24572-05 21700	PELLEGRINI, MARIA C EXPRESSION AND ORGANIZATION OF RIBOSOMAL PROTEIN GENES	UNIVERSITY OF SOUTHERN CALIFORNIA	LOS ANGELES CALIFORNIA	82	12-82	1	GEN	61,315	88,600
5	R01 GM24663-05 21400	HORVITZ, HOWARD R GENETIC ANALYSIS OF NEMATODE EGG-LAYING	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	CAMBRIDGE MASSACHUSETTS	82	12-82	3	GEN	50,149	65,689
5	R01 GM24681-05 21800	TASHIAN, RICHARD E EVOLUTION OF MAMMALIAN CARBONIC ANHYDRASES	UNIVERSITY OF MICHIGAN AT ANN ARBOR	ANN ARBOR MICHIGAN	82	11-82	0	GEN	134,195	212,028
5	R01 GM24756-05 21700	RUBENSTEIN, IRWIN MOLECULAR ORGANIZATION OF THE ZEIN MULTIGENE FAMILY	UNIVERSITY OF MINNESOTA OF MNPLS-ST PAUL	MINNEAPOLIS MINNESOTA	82	07-83	3	GEN	70,680	98,245
5	R01 GM24764-05 21700	GAREN, ALAN HORMONAL CONTROLS OF DROSOPHILA DEVELOPMENT	YALE UNIVERSITY	NEW HAVEN CONNECTICUT	82	12-82	3	GEN	72,092	113,905
5	R01 GM25103-05 21600	YOUNG, MICHAEL W GENE ORGANIZATION AND FUNCTION IN D. MELANOGASTER	ROCKEFELLER UNIVERSITY	NEW YORK NEW YORK	82	03-83	1	GEN	62,892	96,728
5	R01 GM25137-03 21750	MOWSHOWITZ, DEBORAH B CONTROL OF PERIODIC ENZYME SYNTHESIS IN EUKARYOTES	COLUMBIA UNIVERSITY	NEW YORK NEW YORK	81	02-83	0	GEN	35,012	53,060

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5	R01 GM25168-05 21320	WILHELM, JAMES M PROTEIN SYNTHESIS ERRORS IN EUKARYOTIC CELLS	UNIVERSITY OF ROCHESTER	ROCHESTER NEW YORK	82	03-83	3	GEN	70,702	112,836
2	R01 GM25207-04 21750	GREER, HELEN A GENE REGULATION OF HISTIDINE BIOSYNTHESIS IN YEAST	HARVARD UNIVERSITY	CAMBRIDGE MASSACHUSETTS	82	11-82	2	GEN	101,250	148,365
5	R01 GM25232-05 21750	LIS, JOHN T COORDINATE GENE REGULATION IN ANIMAL CELLS	CORNELL UNIVERSITY ITHACA	ITHACA NEW YORK	82	03-83	3	GEN	73,703	103,840
5	R01 GM25255-05 21700	DOANE, WINIFRED W GENETIC REGULATORY MECHANISMS IN CELLULAR DIFFERENTIATIO	ARIZONA STATE UNIVERSITY	TEMPE ARIZONA	82	12-82	1	GEN	102,773	153,669
5	R01 GM25365-03 21600	ARNHEIM, NORMAN GENETIC AND MOLECULAR STUDIES OF HUMAN AND MOUSE DNA	STATE UNIVERSITY NEW YORK STONY BROOK	STONY BROOK NEW YORK	81	06-83	0	GEN	65,545	93,031
5	R01 GM25388-05 21750	SPRAGUE, KAREN U CONTROL OF TRNA GENE EXPRESSION IN BOMBYX MORI	UNIVERSITY OF OREGON	EUGENE OREGON	82	07-83	3	GEN	81,338	114,342
2	R01 GM25399-04 21700	KIDWELL, MARGARET G GENETIC ASPECTS OF HYBRID DYSGENESIS IN DROSOPHILA	BROWN UNIVERSITY	PROVIDENCE RHODE ISLAND	82	11-82	2	GEN	62,750	97,435
5	R01 GM25532-05 21750	WARNER, JONATHAN R RIBOSOMAL PROTEIN GENES OF SACCHAROMYCES CEREVISIAE	YESHIVA UNIVERSITY	NEW YORK NEW YORK	82	07-83	3	GEN	146,257	248,324
5	R01 GM25562-04 21250	BOYD, JAMES B DNA SYNTHESIS IN MUTAGEN-SENSITIVE DROSOPHILA STRAINS	UNIVERSITY OF CALIFORNIA DAVIS	DAVIS CALIFORNIA	82	12-82	0	GEN	57,762	75,668
5	R01 GM25565-05 21280	HELLING, ROBERT B CHLOROPLAST DNA FROM EUGLENA	UNIVERSITY OF MICHIGAN AT ANN ARBOR	ANN ARBOR MICHIGAN	82	06-83	0	GEN	43,475	68,691
5	R01 GM25578-05 21400	QUINN, WILLIAM G, JR GENETIC ANALYSIS OF LEARNING AND MEMORY IN DROSOPHILA	PRINCETON UNIVERSITY	PRINCETON NEW JERSEY	82	06-83	1	GEN	65,009	100,119
5	R01 GM25624-05 21700	HICKS, JAMES B REGULATION AND INTERCONVERSION OF MATING TYPES IN YEAST	COLD SPRING HARBOR LABORATORY	COLD SPRING HARB NEW YORK	82	06-83	3	GEN	119,885	211,172

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2	R01 GM25648-04 22300	DOUGLAS, MICHAEL G ASSEMBLY OF THE YEAST MITOCHONDRIAL ATPASE COMPLEX	UNIVERSITY OF TEXAS HLTH SCI CTR SAN ANT	SAN ANTONIO TEXAS	82	11-82	4	GEN 88,557	115,722
5	R01 GM25678-05 21700	KLAR, AMAR J MOLECULAR MECHANISMS OF DIFFERENTIATION	COLD SPRING HARBOR LABORATORY	COLD SPRING HARB NEW YORK	82	06-83	3	GEN 88,675	155,587
5	R01 GM25692-03 21750	MC REYNOLDS, LARRY A DEVELOPMENT OF VECTOR FOR EUKARYOTIC GENE TRANSFER	UNIVERSITY OF ARIZONA	TUCSON ARIZONA	81	09-82	0	GEN 57,074	79,208
2	R01 GM25874-04 21320	LINDQUIST, SUSAN L REGULATION OF GENE EXPRESSION IN DROSOPHILA	UNIVERSITY OF CHICAGO	CHICAGO ILLINOIS	82	11-82	4	GEN 86,897	126,533
5	R01 GM25886-03 21600	MARX, KENNETH A PROPERTIES OF NUCLEASE-RESISTING MOUSE CHROMATIN	DARTMOUTH COLLEGE	HANOVER NEW HAMPSHIRE	81	07-83	0	GEN 41,541	62,021
2	R01 GM25966-04 21700	MITCHELL, HERSCHEL K BIOCHEMICAL GENETICS OF DEVELOPMENT IN DROSOPHILA	CALIFORNIA INSTITUTE OF TECHNOLOGY	PASADENA CALIFORNIA	82	03-83	2	GEN 69,284	102,300
2	R01 GM25976-04 21700	SCHEDL, PAUL GENE EXPRESSION DURING D MELANOGASTER EMBRYOGENESIS	PRINCETON UNIVERSITY	PRINCETON NEW JERSEY	82	11-82	4	GEN 72,576	115,428
2	R01 GM26079-04 21750	YOUNG, ELTON T, II GENETIC REGULATION OF ALCOHOL METABOLISM IN YEAST	UNIVERSITY OF WASHINGTON	SEATTLE WASHINGTON	82	11-82	4	GEN 115,776	152,990
5	R01 GM26139-03 21700	GRAINGER, ROBERT M THE ROLE OF OOCYTE PROTEINS AND RNAS IN DEVELOPMENT	UNIVERSITY OF VIRGINIA CHARLOTTESVILLE	CHARLOTTESVILLE VIRGINIA	81	08-83	0	GEN 50,107	71,080
5	R01 GM26200-04 21700	BAKER, BRUCE S GENETIC CONTROL OF RECOMBINATION IN DROSOPHILA	UNIVERSITY OF CALIFORNIA SAN DIEGO	LA JOLLA CALIFORNIA	82	03-83	1	GEN 26,793	34,866
5	R01 GM26207-03 21700	MARONI, GUSTAVO P REGULATION OF ALCOHOL DEHYDROGENASE IN DROSOPHILA	UNIVERSITY OF NORTH CAROLINA CHAPEL HILL	CHAPEL HILL NORTH CAROLINA	81	03-83	0	GEN 30,555	43,999
2	R01 GM26217-04 21320	CULBERTSON, MICHAEL R FRAMESHIFT SUPPRESSORS AND TRANSFER RNA IN YEAST	UNIVERSITY OF WISCONSIN MADISON	MADISON WISCONSIN	82	03-83	4	GEN 72,232	99,574

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5	R01 GM26259-05 21600	BLACKBURN, ELIZABETH H SPECIFIC DNA-PROTEIN INTERACTIONS IN TETRAHYMENA	UNIVERSITY OF CALIFORNIA BERKELEY	BERKELEY	82 CALIFORNIA	06-83	1	GEN 72,292	102,582
2	R01 GM26378-04 21600	RAE, PETER M GENE INTERRUPTIONS	YALE UNIVERSITY	NEW HAVEN	82 CONNECTICUT	03-83	4	GEN 100,790	156,116
5	R01 GM26415-03 21600	WRAY, GRANVILLE W PRECONDENSED CHROMOSOMES--STRUCTURE AND BIOCHEMISTRY	BAYLOR COLLEGE OF MEDICINE	HOUSTON	81 TEXAS	06-83	0	GEN 45,433	61,069
2	R01 GM26453-04 21600	GOTTESFELD, JOEL M ISOLATION OF 5S GENE CHROMATIN	SCRIPPS CLINIC AND RESEARCH FOUNDATION	LA JOLLA	82 CALIFORNIA	07-83	2	GEN 102,760	159,205
2	R01 GM26515-04 21750	HIRSH, DAVID I STRUCTURE AND EXPRESSION OF EUCARYOTIC GENES	UNIVERSITY OF COLORADO AT BOULDER	BOULDER	82 COLORADO	03-83	4	GEN 103,390	138,798
5	R01 GM26527-03 21750	BORISY, GARY ORGANIZATION AND REPLICATION OF YEAST RIBOSOMAL DNA	UNIVERSITY OF WISCONSIN MADISON	MADISON	81 WISCONSIN	09-82	0	GEN 65,355	92,751
2	R01 GM26546-05 21280	GROSSMAN, LAWRENCE I GENES ON MITOCHONDRIAL DNA	UNIVERSITY OF MICHIGAN AT ANN ARBOR	ANN ARBOR	82 MICHIGAN	08-83	2	GEN 232,856	298,710
5	R01 GM26632-03 22200	DIMOND, RANDALL L REGULATION OF DIVERGENT PATHWAYS OF DEVELOPMENT	UNIVERSITY OF WISCONSIN MADISON	MADISON	81 WISCONSIN	02-83	0	GEN 77,115	86,957
5	R01 GM26690-04 21320	SYPHERD, PAUL S POST-TRANSCRIPTIONAL REGULATION OF GENE EXPRESSION	UNIVERSITY OF CALIFORNIA IRVINE	IRVINE	82 CALIFORNIA	07-83	0	GEN 68,977	96,223
5	R01 GM26693-03 21700	BONNER, JAMES J MOLECULAR DISSECTION OF GENE REGULATION IN DROSOPHILA	INDIANA UNIVERSITY BLOOMINGTON	BLOOMINGTON	81 INDIANA	11-82	0	GEN 47,385	64,960
3	R01 GM26693-03S1 21700	BONNER, JAMES J MOLECULAR DISSECTION OF GENE REGULATION IN DROSOPHILA	INDIANA UNIVERSITY BLOOMINGTON	BLOOMINGTON	82 INDIANA	11-82	0	GEN 13,960	20,242
2	R01 GM26706-04 21600	EMERSON, CHARLES P, JR ORGANIZATION AND REGULATION OF MUSCLE GENES	UNIVERSITY OF VIRGINIA CHARLOTTESVILLE	CHARLOTTESVILLE	82 VIRGINIA	07-83	4	GEN 106,440	148,527

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5	R01 GM26710-03 21600	WADSWORTH, SAMUEL C TRANSCRIPTIONAL CONTROL OF HEAT SHOCK GENES	WORCESTER FDN FOR EXPER BIOLOGY	SHREWSBURY MASSACHUSETTS	81	03-83	0	GEN 60,597	101,448
5	R01 GM26717-03 21480	BLAU, HELEN M MUSCLE DIFFERENTIATION IN HETEROKARYONS	STANFORD UNIVERSITY	STANFORD CALIFORNIA	81	06-83	0	GEN 49,939	76,774
5	R01 GM26758-02 21800	WATT, WARD B NATURAL GENETIC VARIATION: IN VIVO METABOLIC IMPACT	STANFORD UNIVERSITY	STANFORD CALIFORNIA	82	11-82	1	GEN 58,014	90,502
5	R01 GM26770-04 21750	CHAPMAN, VERNE M NEW GLUCURONIDASE REGULATORY VARIANTS IN MICE	ROSWELL PARK MEMORIAL INSTITUTE	BUFFALO NEW YORK	82	06-83	1	GEN 99,669	148,351
5	R01 GM26808-03 21750	KLASS, MICHAEL R CELL-SPECIFIC GENE EXPRESSION	UNIVERSITY OF HOUSTON AT HOUSTON	HOUSTON TEXAS	81	08-83	0	GEN 50,518	65,673
2	R01 GM26810-04 21700	LINDSLEY, DAN L GAMETOGENESIS IN DROSOPHILA	UNIVERSITY OF CALIFORNIA SAN DIEGO	LA JOLLA CALIFORNIA	82	05-83	2	GEN 122,368	159,992
2	R01 GM26938-04 21200	ZAKIAN, VIRGINIA A DNA REPLICATION AND CHROMOSOME STRUCTURE IN YEAST	FRED HUTCHINSON CANCER RESEARCH CENTER	SEATTLE WASHINGTON	82	06-83	2	GEN 102,000	112,138
5	R01 GM26941-03 21480	TYE, BIK-KWOON THE STRUCTURAL GENE FOR A YEAST PHEROMONE	CORNELL UNIVERSITY ITHACA	ITHACA NEW YORK	82	04-83	0	GEN 43,631	63,287
5	R01 GM26998-03 21280	GOLLUB, EDITH G HEME REGULATION OF MACROMOLECULAR CELL COMPONENTS	BARNARD COLLEGE	NEW YORK NEW YORK	82	02-83	0	GEN 51,192	79,240
5	R01 GM27021-03 21800	TEMPLETON, ALAN R SELECTION, COADAPTATION AND SPECIATION IN DROSOPHILA	WASHINGTON UNIVERSITY	SAINT LOUIS MISSOURI	82	06-83	0	GEN 32,260	50,003
5	R01 GM27103-03 21200	HOLLOMAN, WILLIAM K ENZYMOLOGY OF GENETIC RECOMBINATION	UNIVERSITY OF FLORIDA	GAINESVILLE FLORIDA	82	12-82	0	GEN 52,917	76,412
5	R01 GM27120-03 21800	LANDE, RUSSELL S CORRELATED CHARACTERS IN COMPLEX GENETIC SYSTEMS	UNIVERSITY OF CHICAGO	CHICAGO ILLINOIS	82	08-83	0	GEN 20,820	35,186

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5	R01 GM27195-03 21700	DENELL, ROBIN E A DEVELOPMENTAL GENETIC ANALYSIS OF THE CELL SURFACE	KANSAS STATE UNIVERSITY	MANHATTAN	KANSAS	82	12-82	0	GEN		40,178	56,633
5	R01 GM27314-03 21280	SIMON, LEE D GENETIC CONTROL OF PROTEIN DEGRADATION	RUTGERS THE STATE UNIV NEW BRUNSWICK	NEW BRUNSWICK	NEW JERSEY	82	11-82	1	GEN		65,696	103,800
2	R01 GM27597-04 21280	MARTIN, NANCY C TRANSCRIPTION AND ORGANIZATION OF MITOCHONDRIAL GENES	UNIVERSITY OF TEXAS HLTH SCI CTR DALLAS	DALLAS	TEXAS	82	05-83	4	GEN		89,365	118,409
2	R01 GM27611-04 21600	STORTI, ROBERT V EXPRESSION AND ISOLATION OF DROSOPHILA MUSCLE GENES	UNIVERSITY OF ILLINOIS MEDICAL CENTER	CHICAGO	ILLINOIS	82	07-83	2	GEN		71,700	113,286
2	R01 GM27623-03A1 21600	LOHR, DENNIS E PHASING AND REPEATS IN ACTIVELY TRANSCRIBED CHROMATIN	ARIZONA STATE UNIVERSITY	TEMPE	ARIZONA	82	06-83	2	GEN		50,467	72,354
5	R01 GM27624-03 21320	HAWTHORNE, DONALD C SUPPRESSOR GENES AND INTERSPECIFIC HYBRIDS OF YEAST	UNIVERSITY OF WASHINGTON	SEATTLE	WASHINGTON	82	07-83	0	GEN		48,640	65,178
5	R01 GM27703-03 21700	ALLEN, SALLY L NUCLEAR DIFFERENTIATION IN TETRAHYMENA	UNIVERSITY OF MICHIGAN AT ANN ARBOR	ANN ARBOR	MICHIGAN	82	03-83	0	GEN		66,497	105,065
5	R01 GM27712-03 21700	KABACK, DAVID B TRANSCRIPTION DURING MEIOSIS AND SPORULATION IN YEAST	UNIVERSITY OF MEDICINE & DENTISTRY OF NJ	NEWARK	NEW JERSEY	82	03-83	0	GEN		68,024	113,515
5	R01 GM27862-03 21200	SZOSTAK, JACK W MECHANISMS OF SEQUENCE RECTIFICATION IN YEAST RDNA	SIDNEY FARBER CANCER INSTITUTE	BOSTON	MASSACHUSETTS	82	03-83	0	GEN		48,516	82,197
5	R01 GM27863-03 21600	PUKKILA, PATRICIA J MEIOSIS AND GENETIC RECOMBINATION IN COPRINUS CINEREUS	UNIVERSITY OF NORTH CAROLINA CHAPEL HILL	CHAPEL HILL	NORTH CAROLINA	82	03-83	0	GEN		46,805	64,706
5	R01 GM27864-03 21700	KARRER, KATHLEEN M GERM LINE SPECIFIC DNA SEQUENCES IN TETRAHYMENA	BRANDEIS UNIVERSITY	WALTHAM	MASSACHUSETTS	82	03-83	0	GEN		44,072	71,397
5	R01 GM27866-03 21700	COURTRIGHT, JAMES B GENETIC REGULATION OF TISSUE-SPECIFIC GENE EXPRESSION	MARQUETTE UNIVERSITY	MILWAUKEE	WISCONSIN	82	08-83	0	GEN		35,970	47,319

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5	R01 GM27870-03 21750	CRAIG, ELIZABETH A CHARACTERIZATION OF TRANSCRIPTIONALLY REGULATED GENES	UNIVERSITY OF WISCONSIN	MADISON MADISON	82 WISCONSIN	03-83	0	GEN		56,164	79,025
5	R01 GM27871-03 21480	BRUNS, PETER J THE GENETIC ORGANIZATION OF TETRAHYMENA	CORNELL UNIVERSITY	ITHACA ITHACA	82 NEW YORK	03-83	2	GEN		63,072	94,951
5	R01 GM27875-03 21700	SPRADLING, ALLAN C NORMAL AND MUTANT CHORION GENES OF DROSOPHILA	CARNEGIE INSTITUTION OF WASHINGTON D C	BALTIMORE MARYLAND	82	03-83	0	GEN		60,847	91,283
5	R01 GM27887-03 22400	DE MOSS, JOHN A SUBUNIT/DOMAIN INTERACTIONS IN MULTIFUNCTIONAL ENZYMES	UNIVERSITY OF TEXAS HLTH SCI CTR HOUSTON	HOUSTON TEXAS	82	04-83	0	GEN		73,963	101,214
5	R01 GM27889-03 21750	OLSON, MAYNARD V YEAST TRNA GENES	WASHINGTON UNIVERSITY	SAINT LOUIS MISSOURI	82	03-83	0	GEN		47,229	73,205
5	R01 GM27915-03 21800	YARDLEY, DARRELL G THE AMYLASE SYSTEM OF DROSOPHILA PSEUDOOBSCURA	CLEMSON UNIVERSITY	CLEMSON SOUTH CAROLINA	82	03-83	0	GEN		31,503	47,570
5	R01 GM27916-02 21600	ROTHSTEIN, RODNEY J MECHANISMS OF GENOMIC REARRANGEMENTS IN YEAST	UNIVERSITY OF MEDICINE & DENTISTRY OF NJ	NEWARK NEW JERSEY	82	01-83	1	GEN		26,000	43,225
2	R01 GM27929-04 21780	BROACH, JAMES R GENE EXPRESSION OF THE YEAST PLASMID, 2 MICRON CIRCLE	STATE UNIVERSITY NEW YORK STONY BROOK	STONY BROOK NEW YORK	82	08-83	4	GEN		80,000	115,595
5	R01 GM27930-03 21320	HOPPER, ANITA K YEAST MUTANTS IN TRNA-TRANSCRIPTION AND MATURATION	PENNSYLVANIA STATE UNIV HERSHEY MED CTR	HERSHEY PENNSYLVANIA	81	08-83	0	GEN		59,324	79,817
5	R01 GM27949-30 21200	ROMAN, HERSCHEL L GENETIC INVESTIGATIONS IN YEAST--SACCHAROMYCES	UNIVERSITY OF WASHINGTON	SEATTLE WASHINGTON	82	03-83	2	GEN		55,509	74,027
5	R01 GM28005-03 21700	REED, STEVEN I THE CONTROL OF CELL DIVISION IN YEAST	UNIVERSITY OF CALIFORNIA SANTA BARBARA	SANTA BARBARA CALIFORNIA	82	06-83	0	GEN		61,996	84,568
5	R01 GM28008-03 21600	PROCUNIER, JAMES D ANALYSIS OF EUCARYOTIC REDUNDANT LOCI	RICE UNIVERSITY	HOUSTON TEXAS	82	06-83	0	GEN		50,564	69,778

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5	R01 GM28016-03 21800	FELDMAN, MARCUS W POPULATION GENETICS THEORY	STANFORD UNIVERSITY	STANFORD	CALIFORNIA	82	06-83	0	GEN		55,172	87,172
5	R01 GM28024-02 21800	HOFFMANN, RICHARD J FUNCTION OF GENETICALLY DETERMINED ENZYME VARIATION	IOWA STATE UNIVERSITY OF SCIENCE & TECH	AMES	IOWA	81	11-82	0	GEN		41,752	55,948
5	R01 GM28075-03 21700	MEYEROWITZ, ELLIOT M GENE STRUCTURE AND FUNCTION IN ANIMAL DEVELOPMENT	CALIFORNIA INSTITUTE OF TECHNOLOGY	PASADENA	CALIFORNIA	82	06-83	0	GEN		73,516	107,820
5	R01 GM28078-03 21310	GREENLEAF, ARNO L BIOCHEMICAL GENETICS OF DROSOPHILA RNA POLYMERASE II	DUKE UNIVERSITY	DURHAM	NORTH CAROLINA	82	06-83	2	GEN		86,786	127,731
5	R01 GM28079-03 21600	BRUTLAG, DOUGLAS L TOPOISOMERASES FOLD AND SEGREGATE CHROMOSOMES	STANFORD UNIVERSITY	STANFORD	CALIFORNIA	82	06-83	2	GEN		83,250	126,431
5	R01 GM28090-03 21600	BOLLON, ARTHUR P ANALYSIS OF YEAST NUCLEAR GENES	WADLEY INSTITUTES OF MOLECULAR MEDICINE	DALLAS	TEXAS	82	06-83	0	GEN		51,741	67,946
5	R01 GM28216-08 21750	MICHELS, CORINNE A YEAST--A MODEL FOR STUDYING REGULATION IN CANCER CELLS	QUEENS COLLEGE	NEW YORK	NEW YORK	82	06-83	0	GEN		84,703	138,744
5	R01 GM28228-03 21700	GUILD, GREGORY M EUKARYOTIC GENES: STRUCTURE, FUNCTION, AND REGULATION	UNIVERSITY OF PENNSYLVANIA	PHILADELPHIA	PENNSYLVANIA	82	06-83	0	GEN		67,896	110,026
5	R01 GM28232-03 21600	OLSON, MAYNARD V PHYSICAL MAPPING OF YEAST CHROMOSOMAL DNA	WASHINGTON UNIVERSITY	SAINT LOUIS	MISSOURI	82	07-83	2	GEN		75,157	114,293
5	R01 GM28262-03 21400	SOKAL, ROBERT R SPATIAL ANALYSIS OF HUMAN VARIATION	STATE UNIVERSITY NEW YORK STONY BROOK	STONY BROOK	NEW YORK	82	06-83	0	GEN		43,776	66,758
5	R01 GM28274-03 21750	PEDERSON, THORU GENE TRANSCRIPTION IN DROSOPHILA	WORCESTER FDN FOR EXPER BIOLOGY	SHREWSBURY	MASSACHUSETTS	82	06-83	0	GEN		48,700	77,067
5	R01 GM28301-03 21750	WOOLFORD, JOHN L, JR YEAST RIBOSOMAL PROTEIN GENES: STRUCTURE AND FUNCTION	CARNEGIE-MELLON UNIVERSITY	PITTSBURGH	PENNSYLVANIA	82	07-83	0	GEN		61,455	94,705

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5	R01 GM28311-02 21700	EDGAR, ROBERT S MOLECULAR GENETIC STUDIES OF THE NEMATODE CUTICLE	UNIVERSITY OF CALIFORNIA	SANTA CRUZ SANTA CRUZ CALIFORNIA	82	08-83	1	GEN		92,716	134,533
5	R01 GM28356-03 21400	ELSTON, ROBERT C GENETIC ANALYSIS OF MULTIFACTORIAL TRAITS	LOUISIANA STATE UNIV MED CTR NEW ORLEANS	NEW ORLEANS LOUISIANA	82	11-82	1	GEN		77,088	102,527
5	R01 GM28369-02 21200	STAHL, FRANKLIN W GENETIC RECOMBINATION IN YEAST--A MOLECULAR APPROACH	UNIVERSITY OF OREGON	EUGENE OREGON	82	01-83	1	GEN		58,019	78,074
5	R01 GM28455-02 21800	LAURIE-AHLBERG, CATHY C GENETIC VARIATION OF FLIGHT METABOLISM IN DROSOPHILA	NORTH CAROLINA STATE UNIVERSITY RALEIGH	RALEIGH NORTH CAROLINA	82	01-83	1	GEN		49,665	69,253
5	R01 GM28463-02 21280	HALLICK, RICHARD B STRUCTURE AND ORGANIZATION OF CHLOROPLAST TRNA GENES	UNIVERSITY OF COLORADO AT BOULDER	BOULDER COLORADO	82	11-82	1	GEN		59,915	83,112
5	R01 GM28507-02 21600	MAXAM, ALLAN M METHODS FOR RESOLVING GENE STRUCTURE	SIDNEY FARBER CANCER INSTITUTE	BOSTON MASSACHUSETTS	82	11-82	1	GEN		89,698	144,031
5	R01 GM28579-03 21600	ASHLEY, TERRY F INVESTIGATION OF CHROMOSOMAL ORGANIZATION IN NUCLEI	UNIVERSITY OF TENNESSEE KNOXVILLE	KNOXVILLE TENNESSEE	82	03-83	0	GEN		51,355	74,465
5	R01 GM28600-02 21600	FREELING, MICHAEL STRUCTURE OF THE ANAEROBIC STRESS GENES	UNIVERSITY OF CALIFORNIA BERKELEY	BERKELEY CALIFORNIA	82	02-83	1	GEN		46,220	59,773
5	R01 GM28630-02 21700	BENDER, WELCOME W MOLECULAR GENETICS OF TWO DROSOPHILA LOCI	HARVARD UNIVERSITY	BOSTON MASSACHUSETTS	82	11-82	1	GEN		51,912	100,925
5	R01 GM28634-02 21250	SINGER, BRITTA S DETERMINANTS OF MUTABILITY IN BACTERIOPHAGE T4	UNIVERSITY OF COLORADO AT BOULDER	BOULDER COLORADO	82	01-83	1	GEN		57,438	80,126
5	R01 GM28669-02 21700	GELBART, WILLIAM M PATTERN FORMATION AND GENE ORGANIZATION IN DROSOPHILA	HARVARD UNIVERSITY	CAMBRIDGE MASSACHUSETTS	82	11-82	2	GEN		63,263	94,725
5	R01 GM28680-02 21750	STRAUSBAUGH, LINDA D GENETICS OF HISTONE DNA IN DROSOPHILA	UNIVERSITY OF CONNECTICUT STORRS	STORRS CONNECTICUT	82	01-83	1	GEN		50,486	77,612

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5	R01 GM28706-02 21750	PARKINSON, JOHN S OVERLAPPING GENES IN ESCHERICHIA COLI	UNIVERSITY OF UTAH	SALT LAKE CITY UTAH	82	11-82	1	GEN 45,126	65,433
5	R01 GM28709-02 21200	LIVINGSTON, DENNIS M BIOCHEMISTRY OF GENETIC RECOMBINATION IN YEAST	UNIVERSITY OF MINNESOTA OF MNPLS-ST PAUL	MINNEAPOLIS MINNESOTA	82	01-83	1	GEN 46,573	61,539
5	R01 GM28777-03 21750	GILES, NORMAN H GENETIC REGULATORY MECHANISMS IN NEUROSPORA	UNIVERSITY OF GEORGIA	ATHENS GEORGIA	82	06-83	3	GEN 151,714	208,187
5	R01 GM28779-02 21800	GEER, BILLY W GENETIC AND DIETARY CONTROL OF THE PENTOSE SHUNT	KNOX COLLEGE	GALESBURG ILLINOIS	82	03-83	1	GEN 45,650	68,981
2	R01 GM28791-03 21750	SOFER, WILLIAM H A SYSTEM FOR ANALYSIS OF GENE CONTROL IN DROSOPHILA	RUTGERS THE STATE UNIV	NEW BRUNSWICK NEW JERSEY	82	06-83	4	GEN 68,486	107,164
5	R01 GM28810-02 22300	WU, HENRY C MAMMALIAN CELL SURFACE GENETICS AND BIOCHEMISTRY	U.S. UNIFORMED SERVICES UNIV OF HLTH SCI	BETHESDA MARYLAND	82	11-82	0	GEN 69,732	69,732
5	R01 GM28836-02 21700	DODGSON, JERRY ISOLATION AND EXPRESSION OF ERYTHROID-SPECIFIC GENES	MICHIGAN STATE UNIVERSITY	EAST LANSING MICHIGAN	81	01-83	0	GEN 47,575	66,605
5	R01 GM28837-03 21750	DODGSON, JERRY B CONTROL OF GENE EXPRESSION IN AVIAN ERYTHROPOIESIS	MICHIGAN STATE UNIVERSITY	EAST LANSING MICHIGAN	82	07-83	0	GEN 57,636	81,267
5	R01 GM28851-02 21600	MOORE, GORDON P ORGANIZATION OF TWO STRUCTURAL GENES IN FOUR DROSOPHILID	UNIVERSITY OF MICHIGAN AT ANN ARBOR	ANN ARBOR MICHIGAN	82	03-83	1	GEN 57,000	85,362
5	R01 GM28904-02 21780	ROEDER, GLENNA S MOLECULAR MECHANISMS OF GENETIC RECOMBINATION IN YEAST	YALE UNIVERSITY	NEW HAVEN CONNECTICUT	82	03-83	1	GEN 61,697	95,161
5	R01 GM28905-02 21750	BAKKEN, AIMEE H DISSECTING GENE FUNCTION BY ELECTRON MICROSCOPY	UNIVERSITY OF WASHINGTON	SEATTLE WASHINGTON	82	02-83	1	GEN 60,021	73,734
5	R01 GM28920-02 21750	SMITH, MALCOLM M REGULATION OF HISTONE GENE EXPRESSION IN YEAST	UNIVERSITY OF VIRGINIA CHARLOTTESVILLE	CHARLOTTESVILLE VIRGINIA	82	03-83	1	GEN 42,296	60,278

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5	R01 GM28954-02 21700	WHITE, KALPANA P DEVELOPMENTAL GENETICS OF NEUROGENESIS	BRANDEIS UNIVERSITY	WALTHAM MASSACHUSETTS	82	03-83	1	GEN		42,099	66,030
5	R01 GM28972-02 21700	MARSH, J LAWRENCE DEVELOPMENTAL CONTROL OF GENE EXPRESSION IN DROSOPHILA	UNIVERSITY OF CALIFORNIA IRVINE	IRVINE CALIFORNIA	82	03-83	1	GEN		67,474	86,717
5	R01 GM28998-02 21800	TOMPKINS, LAURIE NEUROGENETICS OF CHEMOSENSORY BEHAVIOR IN DROSOPHILA	TEMPLE UNIVERSITY	PHILADELPHIA PENNSYLVANIA	82	03-83	1	GEN		39,130	52,873
5	R01 GM29002-03 21600	ESPOSITO, MICHAEL S COMPARATIVE ANALYSIS OF MITOTIC & MEIOTIC RECOMBINATION	UNIVERSITY OF CALIFORNIA BERKELEY	BERKELEY CALIFORNIA	82	07-83	2	GEN		96,126	137,460
5	R01 GM29006-02 21200	HSIEH, TAO-SHIH DNA TOPOISOMERASE: FUNCTION AND MECHANISM	DUKE UNIVERSITY	DURHAM NORTH CAROLINA	82	03-83	1	GEN		58,620	87,630
5	R01 GM29009-02 21600	HENIKOFF, STEVEN GENE REGULATION AND CHROMOSOMAL POSTION EFFECTS	FRED HUTCHINSON CANCER RESEARCH CENTER	SEATTLE WASHINGTON	82	03-83	1	GEN		52,600	59,509
5	R01 GM29011-02 21600	STILES, JOHN I GENETIC AND PHYSICAL ANALYSIS OF THE COR REGION IN YEAST	INDIANA STATE UNIVERSITY TERRE HAUTE	TERRE HAUTE INDIANA	82	03-83	1	GEN		33,495	43,358
5	R01 GM29093-02 21700	ARTAVANIS-TSAKONAS, SPYRIDON GENE EXPRESSION IN EUKARYOTIC DEVELOPMENT	YALE UNIVERSITY	NEW HAVEN CONNECTICUT	82	03-83	1	GEN		58,295	89,187
5	R01 GM29097-02 21600	STROBEL, EDWARD CHROMOSOME ORGANIZATION AND STABILITY	PURDUE UNIVERSITY WEST LAFAYETTE	WEST LAFAYETTE INDIANA	82	03-83	1	GEN		47,161	64,389
5	R01 GM29118-02 21310	JAEHNING, JUDITH A RECONSTRUCTION OF SPECIFIC TRANSCRIPTION IN YEAST	UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN	URBANA ILLINOIS	82	03-83	1	GEN		51,124	71,953
5	R01 GM29119-02 21600	BLUMENFELD, MARTIN S AN UNUSUAL NUCLEOSOMAL PROTEIN OF DROSOPHILA	UNIVERSITY OF MINNESOTA OF MNPLS-ST PAUL	MINNEAPOLIS MINNESOTA	82	03-83	1	GEN		62,906	83,752
5	R01 GM29172-02 21200	MALONE, ROBERT E ISOLATION & ANALYSIS OF RECOMBINATION GENES IN YEAST	LOYOLA UNIVERSITY MEDICAL CENTER	MAYWOOD ILLINOIS	82	03-83	1	GEN		91,264	125,273

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5	R01 GM29178-02 21700	EMMONS, SCOTT W GENOME STRUCTURE AND FUNCTION IN THE NEMATODE CAENORHABD	YESHIVA UNIVERSITY	NEW YORK	NEW YORK	82	03-83	1	GEN		67,742	122,087
5	R01 GM29179-02 21600	WU, RAY DNA SEQUENCE ANALYSIS OF EUCARYOTIC CYTOCHROME C GENES	CORNELL UNIVERSITY ITHACA	ITHACA	NEW YORK	82	03-83	3	GEN		75,270	108,289
5	R01 GM29182-02 21700	ESPOSITO, ROCHELLE E MEIOTIC RECOMBINATION AND SEGREGATION IN YEAST	UNIVERSITY OF CHICAGO	CHICAGO	ILLINOIS	82	03-83	3	GEN		99,826	155,587
5	R01 GM29252-02 21600	GOLDSMITH, MARIAN R ORGANIZATION AND EXPRESSION OF A MULTIGENE FAMILY	UNIVERSITY OF RHODE ISLAND	KINGSTON	RHODE ISLAND	81	08-83	0	GEN		55,687	74,390
5	R01 GM29307-02 21700	BRIGGS, ROBERT W A TEMPERATURE SENSITIVE, MATERNAL-EFFECT MUTATION	INDIANA UNIVERSITY BLOOMINGTON	BLOOMINGTON	INDIANA	82	07-83	1	GEN		27,[illegible]2	39,211
5	R01 GM29354-02 21700	FRISTROM, JAMES W THE ACTIN MULTIGENE FAMILY OF DROSOPHILA MELANOGASTER	UNIVERSITY OF CALIFORNIA BERKELEY	BERKELEY	CALIFORNIA	82	07-83	1	GEN		71,731	101,786
5	R01 GM29357-02 21700	FYRBERG, ERIC A ANALYSIS OF GENE EXPRESSION DURING DROSOPHILA MYOGENESIS	JOHNS HOPKINS UNIVERSITY	BALTIMORE	MARYLAND	82	06-83	1	GEN		41,932	61,398
5	R01 GM29362-02 21280	FOX, THOMAS D CODING AND REGULATION OF YEAST MITOCHONDRIAL GENES	CORNELL UNIVERSITY ITHACA	ITHACA	NEW YORK	82	08-83	1	GEN		89,166	122,946
5	R01 GM29379-02 21600	MANIATIS, THOMAS P MOLECULAR GENETICS OF DROSOPHILA ALCOHOL DEHYDROGENASE	HARVARD UNIVERSITY	CAMBRIDGE	MASSACHUSETTS	82	06-83	3	GEN		104,568	159,955
1	R01 GM29384-01 21750	NIERMAN, WILLIAM C TRANSCRIPTION OF DROSOPHILA HEAT SHOCK AND ACTIN GENES	AMERICAN TYPE CULTURE COLLECTION	ROCKVILLE	MARYLAND	82	03-83	2	GEN		40,959	55,707
1	R01 GM29392-01 21700	REGIER, JEROME C CELLULAR DIFFERENTIATION AND EVOLUTION OF GENE FAMILIES	NORTHWESTERN UNIVERSITY	EVANSTON	ILLINOIS	82	01-83	2	GEN		85,902	101,445
5	R01 GM29430-02 21750	PARKER, CARL S SPECIFIC IN VITRO TRANSCRIPTION OF STRUCTURAL GENES	CALIFORNIA INSTITUTE OF TECHNOLOGY	PASADENA	CALIFORNIA	82	08-83	1	GEN		65,236	95,109

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1	R01 GM29460-01A1 22200	LAFFLER, THOMAS G MOLECULAR EVENTS IN THE MITOTIC CYCLE	NORTHWESTERN UNIVERSITY	CHICAGO	ILLINOIS	82	08-83	2	GEN 80,723	113,566
7	R01 GM29463-01 21200	STAMBROOK, PETER J STUDY OF MAMMALIAN GENES AND THEIR REPLICATION	UNIVERSITY OF CINCINNATI	CINCINNATI	OHIO	81	12-82	0	GEN 67,416	93,034
5	R01 GM29473-02 21700	TATCHELL, KELLY G REGULATION OF THE SILENT MATING TYPE GENES IN YEAST	UNIVERSITY OF PENNSYLVANIA	PHILADELPHIA	PENNSYLVANIA	82	06-83	1	GEN 71,835	105,528
1	R01 GM29478-01 21280	HECKMAN, JOYCE E NUCLEAR GENES FOR MITOCHONDIAL PROTEINS IN NEUROSPORA	INDIANA UNIVERSITY BLOOMINGTON	BLOOMINGTON	INDIANA	82	01-83	2	GEN 80,000	99,732
5	R01 GM29480-02 21780	FARABAUGH, PHILIP J THE MOLECULAR GENETICS OF THE YEAST TRANSPOSON TY1	UNIVERSITY OF CONNECTICUT HEALTH CENTER	FARMINGTON	CONNECTICUT	82	08-83	1	GEN 74,623	106,097
1	R01 GM29687-01 21700	DODGSON, JERRY B HISTONE GENE ORGANIZATION AND EXPRESSION IN DEVELOPMENT	MICHIGAN STATE UNIVERSITY	EAST LANSING	MICHIGAN	82	08-83	2	GEN 46,414	62,492
5	R01 GM29709-02 21700	KAUFMAN, THOMAS C MOLECULAR ANALYSIS OF DEVELOPMENT-REGULATING GENES	INDIANA UNIVERSITY BLOOMINGTON	BLOOMINGTON	INDIANA	82	08-83	1	GEN 49,899	71,004
5	R01 GM29713-02 21320	JONES, ELIZABETH W GENETIC ANALYSIS OF ENZYME PROCESSING & LOCALIZATION	CARNEGIE-MELLON UNIVERSITY	PITTSBURGH	PENNSYLVANIA	82	06-83	1	GEN 75,419	115,249
1	R01 GM29722-01 AG 21700	GOODMAN, REBA DNA METHYLATION AND DIPTERAN DIFFERENTIATION	COLUMBIA UNIVERSITY	NEW YORK	NEW YORK	82	08-83	2	GEN 65,950	107,237
1	R01 GM29736-01 21200	HABER, JAMES E PHYSICAL MONITORING OF MEIOTIC DNA RECOMBINATION	BRANDEIS UNIVERSITY	WALTHAM	MASSACHUSETTS	81	03-83	2	GEN 25,838	41,858
5	R01 GM29775-02 21280	WALBOT, VIRGINIA E VARIATION IN MITOCHONDRIAL GENOTYPE	STANFORD UNIVERSITY	STANFORD	CALIFORNIA	82	12-82	0	GEN 55,271	87,328
5	R01 GM29797-02 21480	SIMON, MELVIN I GENETIC AND MOLECULAR MAPPING OF THE MOUSE GENOME	AGOURON INSTITUTE	LA JOLLA	CALIFORNIA	82	02-83	1	GEN 129,836	192,629

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5	R01 GM29810-02 21700	WALLACE, BRUCE EVOLUTIONARY AND DEVELOPMENTAL GENETICS OF DROSOPHILA	VIRGINIA POLYTECHNIC INST AND ST UNIV	BLACKSBURG VIRGINIA	82	03-83	1	30,072	GEN 43,003
1	R01 GM30027-01 21750	SPRAGUE, GEORGE F, JR GENETIC REGULATION OF YEAST CELL TYPE	UNIVERSITY OF OREGON	EUGENE OREGON	82	01-83	2	76,092	GEN 99,507
1	R01 GM30132-01 21700	ANDERSON, ROBERT P THE GENETIC SPECIFICATION OF NEMATODE MUSCLE	UNIVERSITY OF WISCONSIN MADISON	MADISON WISCONSIN	82	01-83	2	89,471	GEN 110,489
1	R01 GM30134-01 21750	ROSSI, JOHN J SYNTHETIC DNA IN STUDIES OF EUKARYOTIC GENE EXPRESSION	CITY OF HOPE NATIONAL MEDICAL CENTER	DUARTE CALIFORNIA	82	01-83	2	70,000	GEN 109,613
1	R01 GM30181-01 21750	STORTI, ROBERT V REGULATION OF EXPRESSION OF CLONED MUSCLE GENES	UNIVERSITY OF ILLINOIS MEDICAL CENTER	CHICAGO ILLINOIS	82	01-83	2	30,705	GEN 48,207
1 2	R01 GM30183-01A1 21280	BOGORAD, LAWRENCE ORGANELLE GENES AND GENE REGULATION	HARVARD UNIVERSITY	CAMBRIDGE MASSACHUSETTS	82	07-83	2	78,981	GEN 116,501
1	R01 GM30186-01 21750	STRUHL, KEVIN EXPRESSION AND REGULATION OF THE YEAST HIS3 GENE	HARVARD UNIVERSITY	BOSTON MASSACHUSETTS	82	02-83	2	85,000	GEN 118,184
5	R01 GM30201-02 21800	DYKHUIZEN, DANIEL E GENETIC BASIS OF SELECTION IN NATURAL POPULATIONS	WASHINGTON UNIVERSITY	SAINT LOUIS MISSOURI	82	08-83	3	89,796	GEN 138,634
1	R01 GM30211-01 22250	BARCLAY, STEPHEN L GENETIC ANALYSIS OF CYTOSKELETAL FUNCTIONS	UNIVERSITY OF ILLINOIS CHICAGO CIRCLE	CHICAGO ILLINOIS	82	03-83	2	69,128	GEN 80,050
1	R01 GM30220-01 21750	DAHLBERG, JAMES E STRUCTURE, ORGANIZATION AND EXPRESSION OF SNRNA GENES	UNIVERSITY OF WISCONSIN MADISON	MADISON WISCONSIN	82	03-83	2	85,353	GEN 117,970
5	R01 GM30273-02 21600	ELGIN, SARAH C NONHISTONE CHROMOSOMAL PROTEINS OF DROSOPHILA	WASHINGTON UNIVERSITY	SAINT LOUIS MISSOURI	82	06-83	3	120,542	GEN 186,840
2	R01 GM30307-02 21750	HOLLAND, MICHAEL J CONTROL OF TRANSCRIPTION OF ISOLATED EUCARYOTIC GENES	UNIVERSITY OF CALIFORNIA DAVIS	DAVIS CALIFORNIA	82	04-83	4	61,746	GEN 80,887

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1	R01 GM30332-01 21600	WORCEL, ABRAHAM STRUCTURE OF INTERPHASE AND METAPHASE CHROMOSOMES	UNIVERSITY OF ROCHESTER	ROCHESTER	NEW YORK	82	11-82	4	GEN	71,501	122,932
1	R01 GM30333-01 CA 21780	CHILDS, GEOFFREY J MOBILIZATION OF TANDEM REPETITIVE GENE FAMILIES	YESHIVA UNIVERSITY	NEW YORK	NEW YORK	82	01-83	2	GEN	79,552	131,162
5	R01 GM30338-02 21600	THOMAS, CHARLES A, JR MOLECULAR CYTOGENETICS	HELICON FOUNDATION	SAN DIEGO	CALIFORNIA	82	01-83	0	GEN	82,328	143,424
7	R01 GM30340-01 21600	COHEN, EDWARD H ORGANIZATION AND EVOLUTION OF DROSOPHILA DNA	FRED HUTCHINSON CANCER RESEARCH CENTER	SEATTLE	WASHINGTON	81	12-82	0	GEN	38,796	45,658
1	R01 GM30347-01 21700	FRANKEL, JACK S ONTOGENETIC PATTERNS OF ENZYME LOCUS EXPRESSION	HOWARD UNIVERSITY	WASHINGTON	DIST OF COL	82	08-83	2	GEN	28,065	47,373
1	R01 GM30348-01 22250	HUANG, BESSIE P GENETIC STUDIES OF FLAGELLAR DYNEIN ARMS	BAYLOR COLLEGE OF MEDICINE	HOUSTON	TEXAS	82	02-83	2	GEN	105,295	136,257
2	R01 GM30349-02 21700	TIMBERLAKE, WILLIAM E REGULATION OF THE LACTASE GENE OF ASPERGILLUS	UNIVERSITY OF CALIFORNIA DAVIS	DAVIS	CALIFORNIA	82	07-83	2	GEN	88,266	119,048
1	R01 GM30351-01 21800	HARTL, DANIEL L MEASURES OF POPULATION FITNESS IN DROSOPHILA	PURDUE UNIVERSITY WEST LAFAYETTE	WEST LAFAYETTE	INDIANA	82	11-82	2	GEN	98,555	137,250
1 2	R01 GM30405-01 21750	BRANDRISS, MARJORIE C GENETIC REGULATION OF PROLINE UTILIZATION	UNIVERSITY OF MEDICINE & DENTISTRY OF NJ	NEWARK	NEW JERSEY	82	05-83	2	GEN	66,387	105,245
1	R13 GM30430-01 GM 21480	DAVIDSON, RICHARD L FASEB CONFERENCE ON SOMATIC CELL GENETICS	FEDERATION OF AMER SOC FOR EXPER BIO	BETHESDA	MARYLAND	82	05-83	0	GEN	2,000	2,000
1	R01 GM30439-01 21600	KLEIN, HANNAH L GENETIC BEHAVIOR OF REPEATED SEQUENCES	NEW YORK UNIVERSITY	NEW YORK	NEW YORK	82	04-83	2	GEN	79,460	106,665
1	R01 GM30442-01 22200	PETERSEN, NANCY S SURVIVAL FROM HEAT SHOCK AS A SCREEN	CALIFORNIA INSTITUTE OF TECHNOLOGY	PASADENA	CALIFORNIA	82	06-83	1	GEN	29,080	43,038

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1	R01 GM30454-01 21750	GUARENTE, LEONARD P GENETICS OF TRANSCRIPTION & TRANSLATION IN YEAST	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	CAMBRIDGE MASSACHUSETTS	82	04-83	2	GEN	65,253	90,804
1	R01 GM30461-01 22200	LO, CECILIA W GAP JUNCTIONAL COMMUNICATION IN DROSOPHILA IMAGINAL DISC	UNIVERSITY OF PENNSYLVANIA	PHILADELPHIA PENNSYLVANIA	82	04-83	2	GEN	81,159	113,744
1	R01 GM30619-01 21780	ERREDE, BEVERLY J REGULATION OF GENE EXPRESSION BY TRANSPOSABLE ELEMENTS	UNIVERSITY OF NORTH CAROLINA CHAPEL HILL	CHAPEL HILL NORTH CAROLINA	82	06-83	2	GEN	75,300	95,778
1	R01 GM30638-01 21400	MARKOW, THERESE A GENETICS OF SEXUAL SELECTION	ARIZONA STATE UNIVERSITY	TEMPE ARIZONA	82	04-83	2	GEN	28,742	43,400
1	R01 GM30693-01 21750	FIRTEL, RICHARD A ANALYSIS OF DEVELOPMENTALLY REGULATED GENES	UNIVERSITY OF CALIFORNIA SAN DIEGO	LA JOLLA CALIFORNIA	82	03-83	4	GEN	81,396	102,948
1	R01 GM30702-01 21700	MEYER, BARBARA J ANALYSIS OF NEMATODE SEX DETERMINATION	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	CAMBRIDGE MASSACHUSETTS	82	08-83	2	GEN	101,638	126,242
1	R01 GM30726-01 21280	CHUA, NAM-HAI GENE STRUCTURE AND REGULATION	ROCKEFELLER UNIVERSITY	NEW YORK NEW YORK	82	04-83	4	GEN	94,227	137,108
1	R01 GM30816-01 21780	POTTER, STANLEY S EUCARYOTIC TRANSPOSABLE GENETIC ELEMENTS	WESLEYAN UNIVERSITY	MIDDLETOWN CONNECTICUT	82	06-83	2	GEN	73,000	102,028
1	R01 GM30870-01 21700	BLUMENTHAL, THOMAS DEVELOPMENTALLY REGULATED GENES OF C. ELEGANS	INDIANA UNIVERSITY BLOOMINGTON	BLOOMINGTON INDIANA	82	08-83	4	GEN	121,600	167,343
1	R01 GM30948-01 21780	ENGELS, WILLIAM R BEHAVIOR OF P FACTORS: MOVABLE ELEMENTS IN DROSOPHILA	UNIVERSITY OF WISCONSIN MADISON	MADISON WISCONSIN	82	06-83	2	GEN	55,000	75,640
1	R01 GM30959-01 21800	ADAMS, JULIAN P EVOLUTION IN YEAST: GENE DUPLICATION AND DIVERGENCE	UNIVERSITY OF MICHIGAN AT ANN ARBOR	ANN ARBOR MICHIGAN	82	07-83	2	GEN	56,130	83,741
1	R01 GM30997-01 21700	CHALFIE, MARTIN GENETIC ANALYSIS OF NEMATODE CELL DIFFERENTIATION	COLUMBIA UNIVERSITY	NEW YORK NEW YORK	82	07-83	2	GEN	91,922	121,142

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1	R01 GM30998-01 21800	LI, WEN-HSIUNG STATISTICAL STUDIES OF DNA EVOLUTION	UNIVERSITY OF TEXAS HLTH SCI CTR HOUSTON	HOUSTON TEXAS	82	06-83	2	GEN 24,564	33,898
1	R01 GM31006-01 21700	PRINGLE, JOHN R GENETIC STUDY OF THE YEAST CELL CYCLE	UNIVERSITY OF MICHIGAN AT ANN ARBOR	ANN ARBOR MICHIGAN	82	06-83	2	GEN 70,129	106,342
1	R01 GM31030-01 21780	SIGNER, ETHAN R MOLECULAR GENETICS OF RHIZOBIUM NODULATION PLASMIDS	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	CAMBRIDGE MASSACHUSETTS	82	06-83	2	GEN 73,658	105,484
1	R01 GM31093-01 21780	BURR, BENJAMIN TRANSPOSABLE GENETIC ELEMENTS OF MAIZE	ASSOCIATED UNIV-BROOKHAVEN NATL LAB	UPTON NEW YORK	82	07-83	1	GEN 80,255	126,218
1	R01 GM31104-01 NS 21700	GREENSPAN, RALPH J DEVELOPMENTAL GENETICS OF NERVOUS SYSTEM IN DROSOPHILA	PRINCETON UNIVERSITY	PRINCETON NEW JERSEY	82	06-83	2	GEN 83,726	117,471
1	R01 GM31105-01 21750	RINE, JASPER D ANALYSIS OF THE GENES CONTROLLING A POSITION EFFECT	UNIVERSITY OF CALIFORNIA BERKELEY	BERKELEY CALIFORNIA	82	06-83	2	GEN 82,935	104,849
1	R01 GM31106-01 21600	LIM, JOHNG K DNA REARRANGEMENTS IN DROSOPHILA CHROMOSOMES	UNIVERSITY OF WISCONSIN EAU CLAIRE	EAU CLAIRE WISCONSIN	82	08-83	2	GEN 115,000	116,739
1	R01 GM31107-01 21750	CRAIG, ELIZABETH A REGULATION AND FUNCTION OF THE YEAST HEAT SHOCK RESPONSE	UNIVERSITY OF WISCONSIN MADISON	MADISON WISCONSIN	82	06-83	2	GEN 71,711	94,648
1	R01 GM31125-01 21750	VOELLMY, RICHARD W MECHANISM OF REGULATION OF HEAT-SHOCK GENE EXPRESSION	UNIVERSITY OF MIAMI	MIAMI FLORIDA	82	06-83	2	GEN 90,000	131,897
1	R01 GM31219-01 21310	WEIL, PETER A MOLECULAR CONTROL OF EUCARYOTIC TRANSCRIPTION	UNIVERSITY OF IOWA	IOWA CITY IOWA	82	06-83	2	GEN 63,854	88,119
1	R01 GM31249-01 21200	INMAN, ROSS B REPLICATION OF DNA IN EUCARYOTES	UNIVERSITY OF WISCONSIN MADISON	MADISON WISCONSIN	82	06-83	2	GEN 58,383	82,284
7	R01 GM31311-01 21700	HEREFORD, LYNNA M THE YEAST CELL CYCLE	SIDNEY FARBER CANCER INSTITUTE	BOSTON MASSACHUSETTS	82	11-82	0	GEN 37,000	59,436

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1	R01 GM31659-01 11770	LEWIS, JAMES A MUTANTS OF AN APPARENT ACETYLCHOLINE RECEPTOR	UNIVERSITY OF MISSOURI	COLUMBIA COLUMBIA MISSOURI	82	06-83	2	GEN	38,410	47,465
7	R01 GM32018-01 21700	ORDAHL, CHARLES P TRANSCRIPTION OF MUSCLE-SPECIFIC GENES IN MYOGENESIS	UNIVERSITY OF CALIFORNIA	SAN FRANCISCO SAN FRANCISCO CALIFORNIA	82	06-83	3	GEN	75,799	96,795
7	R01 GM32092-01 21700	SRIDHARA, S GENE ACTIVITY DURING INSECT METAMORPHOSIS	TEXAS TECH UNIVERSITY	LUBBOCK TEXAS	82	06-83	1	GEN	36,398	47,317
***	0	* CENTERS							0	0
***	306	NONCENTERS							22,331,697	32,279,727
***	306	TOTAL							22,331,697	32,279,727
5	R01 GM28833-03 13420	UITTO, JOUNI J COLLAGEN BIOSYNTHESIS BY CULTURED HUMAN FIBROBLASTS	LOS ANGELES COUNTY HARBOR-UCLA MED CTR	TORRANCE CALIFORNIA	82	07-83	0	GMA	66,467	88,553
5	R01 GM29257-03 13420	HARPER, ROBERT A EPIDERMAL GROWTH FACTOR IN HUMAN SKIN AND DISEASE	TEMPLE UNIVERSITY	PHILADELPHIA PENNSYLVANIA	82	08-83	0	GMA	75,012	119,269
5	R01 GM30755-02 13420	KOCHEVAR, IRENE E ULTRAVIOLET LIGHT INDUCED PHENOMENA IN BIOMEMBRANES	MASSACHUSETTS GENERAL HOSPITAL	BOSTON MASSACHUSETTS	82	07-83	0	GMA	72,915	103,590
***	0	* CENTERS							0	0
***	3	NONCENTERS							214,394	311,412
***	3	TOTAL							214,394	311,412

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5	R01 GM08229-22	VOLCANI, BENJAMIN E	UNIVERSITY OF CALIFORNIA	SAN DIEGO	82	04-83	1	GMB		
	22200	BIOCHEMICAL STUDIES OF SILICEOUS SKELETAL FORMATION		LA JOLLA CALIFORNIA					119,515	156,255
***	0	* CENTERS							0	0
***	1	NONCENTERS							119,515	156,255
***	1	TOTAL							119,515	156,255
5	R01 GM23892-05	BECHTOL, KATHLEEN B	WISTAR INSTITUTE OF ANATOMY AND BIOLOGY		82	08-83	1	HED		
	22200	IMMUNOCHEMICAL APPROACH TO SPERMATOGENESIS		PHILADELPHIA PENNSYLVANIA					76,016	126,672
***	0	* CENTERS							0	0
***	1	NONCENTERS							76,016	126,672
***	1	TOTAL							76,016	126,672
2	R01 GM25946-04	KAPLAN, JOHN E	ALBANY MEDICAL COLLEGE		82	11-82	2	HEM		
	13410	PHAGOCYTIC CONTROL OF THROMBOSIS DURING SEPSIS		ALBANY NEW YORK					50,938	79,474
5	R01 GM30410-02	ZIBOH, VINCENT A	UNIVERSITY OF CALIFORNIA DAVIS		82	07-83	0	HEM		
	11770	ROLE OF PROSTAGLANDINS IN HEMOPOIESIS		DAVIS CALIFORNIA					49,850	68,195
***	0	* CENTERS							0	0
***	2	NONCENTERS							100,788	147,669
***	2	TOTAL							100,788	147,669

T	GRANT NUMBER / PROGRAM (FINE CODE)	INVESTIGATOR / PROJECT TITLE	GRANTEE INSTITUTION	CITY / STATE	FY	END-DATE	FUT-YRS AVAILABLE	IRG SUB	DOLLARS DIRECT	DOLLARS TOTAL
5	R01 GM10356-19 / 21400	AMOS, D BERNARD / THE IMMUNOGENETICS OF MAN, MICE & VIRUSES	DUKE UNIVERSITY	DURHAM / NORTH CAROLINA	82	11-82	2	IMB	296,180	439,870
***	0	* CENTERS							0	0
***	1	NONCENTERS							296,180	439,870
***	1	TOTAL							296,180	439,870
5	R01 GM26235-03 / 13410	WINCHURCH, RICHARD A / TRAUMA-INDUCED SUPPRESSION OF IMMUNITY	JOHNS HOPKINS UNIVERSITY	BALTIMORE / MARYLAND	81	07-85	0	IMS	43,529	65,294
***	0	* CENTERS							0	0
***	1	NONCENTERS							43,529	65,294
***	1	TOTAL							43,529	65,294
5	R01 GM06048-24 / 21750	MAAS, WERNER K / REGULATION OF ENZYME SYNTHESIS IN BACTERIA	NEW YORK UNIVERSITY	NEW YORK / NEW YORK	82	12-82	1	MBC	73,110	109,299
2	R01 GM07446-24 / 21750	MAGASANIK, BORIS / REGULATION AND FUNCTION OF GLUTAMINE SYNTHETASE	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	CAMBRIDGE / MASSACHUSETTS	82	08-83	4	MBC	104,000	145,272

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5	R01 GM09738-20 21750	YANOFSKY, CHARLES GENETIC/BIOCHEMICAL STUDY OF TRYPTOPHAN SYNTHETASE	STANFORD UNIVERSITY	STANFORD CALIFORNIA	82	04-83	1	MBC 98,050	150,304
5	R01 GM11983-19 22400	LIN, EDMUND C GLYCEROL DISSIMILATION AND ITS REGULATION IN BACTERIA	HARVARD UNIVERSITY	BOSTON MASSACHUSETTS	82	04-83	2	MBC 87,634	171,587
5	R01 GM12551-18 22400	BURNS, RICHARD O MOLECULAR MECHANISMS OF BIOLOGICAL CONTROL	DUKE UNIVERSITY	DURHAM NORTH CAROLINA	82	04-83	2	MBC 61,410	92,115
2	R01 GM13511-17 21320	GOLDBERG, EDWARD B VIRAL-HOST RECOGNITION AND PENETRATION	TUFTS UNIVERSITY	BOSTON MASSACHUSETTS	82	11-82	4	MBC 92,850	144,447
5	R01 GM13626-16 21320	GALLANT, JONATHAN A CONTROL OF CELL GROWTH	UNIVERSITY OF WASHINGTON	SEATTLE WASHINGTON	82	04-83	1	MBC 66,448	88,126
5	R01 GM14358-16 21280	FREIFELDER, DAVID M PHYSICOCHEMICAL AND GENETIC STUDIES OF DNA FUNCTION	BRANDEIS UNIVERSITY	WALTHAM MASSACHUSETTS	82	11-82	0	MBC 45,952	74,442
5	R01 GM15381-12 21750	NIERLICH, DONALD P REGULATION OF RNA SYNTHESIS	UNIVERSITY OF CALIFORNIA	LOS ANGELES LOS ANGELES CALIFORNIA	79	12-82	0	MBC 44,308	57,888
5	R01 GM15590-16 22300	KAPLAN, SAMUEL INDUCTION AND BIOGENESIS OF SUBCELLULAR ORGANELLES	UNIVERSITY OF ILLINOIS	URBANA-CHAMPAIGN URBANA ILLINOIS	82	12-82	2	MBC 78,716	110,989
5	R01 GM15837-15 22300	WRIGHT, ANDREW STRUCTURE AND FUNCTION OF THE CELL MEMBRANE	TUFTS UNIVERSITY	BOSTON MASSACHUSETTS	82	04-83	3	MBC 76,675	121,530
5	R01 GM16059-12 21250	RUDNER, RIVKA MACROMOLECULAR ASPECTS OF SYNCHRONOUS CELL DIVISION	HUNTER COLLEGE	NEW YORK NEW YORK	81	11-82	0	MBC 47,415	76,146
5	R01 GM16835-14 21320	DAVIS, BERNARD D MEMBRANE-ASSOCIATED RIBOSOMES AND PROTEIN SECRETION	HARVARD UNIVERSITY	BOSTON MASSACHUSETTS	82	05-83	1	MBC 85,712	167,824
5	R01 GM17709-13 21700	HARTWELL, LELAND H GENETIC ANALYSIS OF THE EUKARYOTIC CELL CYCLE	UNIVERSITY OF WASHINGTON	SEATTLE WASHINGTON	82	08-83	2	MBC 107,839	142,804

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5	R01 GM17892-13 21320	NEIDHARDT, FREDERICK C REGULATION OF BACTERIAL METABOLISM	UNIVERSITY OF MICHIGAN AT ANN ARBOR	ANN ARBOR MICHIGAN	82	08-83	0	MBC 78,960	124,757
5	R01 GM18012-08 21200	YEH, YUN-CHI BIOCHEMICAL AND GENETIC STUDIES OF DNA SYNTHESIS	UNIVERSITY OF ARKANSAS MED SCIENCES	LITTLE ROCK ARKANSAS	80	03-83	0	MBC 45,492	60,401
5	R01 GM18277-12 21750	SCHLEIF, ROBERT F REGULATORY MECHANISMS OF THE ARABINOSE OPERON	BRANDEIS UNIVERSITY	WALTHAM MASSACHUSETTS	82	04-83	1	MBC 74,885	120,694
5	R01 GM18305-11 22300	WEBSTER, ROBERT E BIOSYNTHESIS OF A MEMBRANE PROTEIN	DUKE UNIVERSITY	DURHAM NORTH CAROLINA	82	12-82	0	MBC 65,544	97,816
5	R01 GM18539-12 22300	SIMONI, ROBERT D MEMBRANE FUNCTION AND CELLULAR ENERGETICS	STANFORD UNIVERSITY	STANFORD CALIFORNIA	82	07-83	1	MBC 80,759	126,43[illegible]
5	R01 GM18568-10 21750	LOSICK, RICHARD M ROLE OF RNA POLYMERASE IN BACTERIAL DIFFERENTIATION	HARVARD UNIVERSITY	CAMBRIDGE MASSACHUSETTS	82	01-83	2	MBC 87,986	135,498
5	R01 GM18904-11 21750	HALVORSON, HARLYN O REGULATION OF DIFFERENTIATION IN BACILLUS SPORES	BRANDEIS UNIVERSITY	WALTHAM MASSACHUSETTS	82	12-82	2	MBC 85,574	138,010
5	R01 GM19010-11 21200	GANESAN, ANN K DNA REPAIR IN ESCHERICHIA COLI AND BACILLUS SUBTILIS	STANFORD UNIVERSITY	STANFORD CALIFORNIA	82	07-83	0	MBC 70,011	110,617
5	R01 GM19043-11 22300	INOUYE, MASAYORI CELL DIVISION AND MEMBRANE PROTEINS	STATE UNIVERSITY NEW YORK STONY BROOK	STONY BROOK NEW YORK	82	12-82	2	MBC 101,572	151,485
5	R01 GM19168-11 21750	SONENSHEIN, ABRAHAM L ROLE OF RNA POLYMERASE IN BACTERIAL DIFFERENTIATION	TUFTS UNIVERSITY	BOSTON MASSACHUSETTS	82	01-83	2	MBC 52,574	82,745
5	R01 GM19398-09 21280	BRAMBL, ROBERT M MITOCHONDRIAL BIOGENESIS AND FUNGAL SPORE GERMINATION	UNIVERSITY OF MINNESOTA OF MNPLS-ST PAUL	MINNEAPOLIS MINNESOTA	82	05-83	0	MBC 43,046	58,543
5	R01 GM19427-11 21280	BOYNTON, JOHN E HEREDITARY CONTROL OF ORGANELLE STRUCTURE AND FUNCTION	DUKE UNIVERSITY	DURHAM NORTH CAROLINA	82	04-83	2	MBC 147,471	221,207

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5	R01 GM19483-12 22300	FAN, DAVID P CELL GROWTH AND DIVISION	UNIVERSITY OF MINNESOTA OF MNPLS-ST PAUL	MINNEAPOLIS MINNESOTA	81	12-82	0	MBC	72,260	101,937
5	R01 GM19511-11 22500	DE MOSS, JOHN A ASSEMBLY OF A MEMBRANE-BOUND MULTI-ENZYME COMPLEX	UNIVERSITY OF TEXAS HLTH SCI CTR HOUSTON	HOUSTON TEXAS	82	07-83	1	MBC	81,108	110,029
5	R01 GM19670-10 21750	REZNIKOFF, WILLIAM S PROMOTER AND TRANSPOSON STRUCTURAL STUDIES	UNIVERSITY OF WISCONSIN MADISON	MADISON WISCONSIN	82	08-83	2	MBC	80,178	114,655
5	R01 GM19693-09 21320	SMITH, ISSAR REGULATORY MECHANISMS IN RIBOSOME BIOSYNTHESIS	PUBLIC HLTH RES INST OF THE CITY OF NY	NEW YORK NEW YORK	82	05-83	1	MBC	69,535	96,863
5	R01 GM19698-11 22200	SETLOW, PETER DEGRADATION REACTIONS IN SPORE GERMINATION	UNIVERSITY OF CONNECTICUT HEALTH CENTER	FARMINGTON CONNECTICUT	82	08-83	1	MBC	96,811	139,476
5	R01 GM19822-23 22400	KENNEDY, EUGENE P METABOLISM AND FUNCTION OF COMPLEX LIPIDS	HARVARD UNIVERSITY	BOSTON MASSACHUSETTS	82	11-82	0	MBC	61,283	117,861
5	R01 GM19848-09 21800	LEVIN, BRUCE R PROTEIN VARIATION AND SELECTION MECHANISMS IN E. COLI	UNIVERSITY OF MASSACHUSETTS AMHERST	AMHERST MASSACHUSETTS	82	11-82	1	MBC	63,009	91,363
5	R01 GM19957-10 22200	DWORKIN, MARTIN CELL INTERACTIONS AND DEVELOPMENT IN MYXOCOCCUS XANTHUS	UNIVERSITY OF MINNESOTA OF MNPLS-ST PAUL	MINNEAPOLIS MINNESOTA	82	05-83	3	MBC	65,166	88,626
5	R01 GM19972-13 22500	MC FADDEN, BRUCE A BIOCHEMISTRY OF MEMBRANE AND CATALYTIC PROTEINS	WASHINGTON STATE UNIVERSITY	PULLMAN WASHINGTON	82	07-83	3	MBC	84,163	120,461
2	R01 GM19978-09 22410	GANDER, JOHN E FUNGAL GLYCOPEPTIDE BIOSYNTHESIS	UNIVERSITY OF MINNESOTA OF MNPLS-ST PAUL	MINNEAPOLIS MINNESOTA	82	08-83	4	MBC	76,185	103,102
2	R01 GM20015-09 22300	BELL, ROBERT M REGULATION OF MEMBRANE PHOSPHOLIPID SYNTHESIS	DUKE UNIVERSITY	DURHAM NORTH CAROLINA	82	04-83	4	MBC	93,824	136,586
2	R01 GM20053-18 11910	BENTLEY, RONALD BIOSYNTHESIS OF VITAMIN K	UNIVERSITY OF PITTSBURGH	PITTSBURGH PENNSYLVANIA	82	08-83	4	MBC	98,445	138,690

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5	R01 GM20172-08 22400	TAYLOR, BARRIE F ENZYMES OF AROMATIC OXIDATIONS FROM MICROORGANISMS	UNIVERSITY OF MIAMI	MIAMI FLORIDA	82	06-83	0	MBC	68,993	98,015
2	R01 GM20606-09 21320	ARONSON, ARTHUR I MORPHOGENETIC PROCESSES IN BACTERIAL SPORULATION	PURDUE UNIVERSITY WEST LAFAYETTE	WEST LAFAYETTE INDIANA	82	03-83	4	MBC	77,034	106,327
5	R01 GM21006-06 22300	PIERUCCI, OLGA ROLE OF THE BACTERIAL ENVELOPE IN CELL DUPLICATION	ROSWELL PARK MEMORIAL INSTITUTE	BUFFALO NEW YORK	81	03-83	0	MBC	29,686	38,739
5	R01 GM21098-09 22400	FRAENKEL, DAN G ENZYMES AND PATHWAYS IN GLYCOLYSIS MUTANTS	HARVARD UNIVERSITY	BOSTON MASSACHUSETTS	82	07-83	0	MBC	65,185	127,632
5	R01 GM21198-14 21750	LESSIE, THOMAS G BIOCHEMICAL VERSATILITY OF PSEUDOMONAS CEPACIA	UNIVERSITY OF MASSACHUSETTS AMHERST	AMHERST MASSACHUSETTS	82	03-83	2	MBC	51,098	74,092
5	R01 GM21307-09 21750	KUSTU, SYDNEY G GENETIC STUDIES OF GLUTAMINE SYNTHETASE IN BACTERIA	UNIVERSITY OF CALIFORNIA DAVIS	DAVIS CALIFORNIA	82	05-83	0	MBC	68,780	90,102
5	R01 GM21514-08 21600	GILBERT, WALTER INTERACTION OF PROTEINS WITH DNA	HARVARD UNIVERSITY	CAMBRIDGE MASSACHUSETTS	82	11-82	0	MBC	55,569	85,576
5	R01 GM21827-08 22450	SHERMAN, LOUIS A PHOTOSYNTHESIS, MUTANTS AND CLONING IN CYANOBACTERIA	UNIVERSITY OF MISSOURI COLUMBIA	COLUMBIA MISSOURI	82	04-83	1	MBC	69,094	92,912
2	R01 GM21842-07 22200	BRODY, STUART BIOCHEMISTRY OF CIRCADIAN RHYTHMS IN NEUROSPORA	UNIVERSITY OF CALIFORNIA SAN DIEGO	LA JOLLA CALIFORNIA	82	11-82	2	MBC	79,962	102,125
5	R01 GM21887-07 21780	GUILD, WALTER R PNEUMOCOCCAL PHAGE AS GENETIC TOOLS	DUKE UNIVERSITY	DURHAM NORTH CAROLINA	82	06-83	1	MBC	45,194	67,191
5	R01 GM21890-06 21200	SCOCCA, JOHN J DNA INTERACTIONS IN BACTERIAL TRANSFORMATION	JOHNS HOPKINS UNIVERSITY	BALTIMORE MARYLAND	82	03-83	0	MBC	68,679	103,019
5	R01 GM22030-07 21320	TAI, PHANG-CHENG THE FUNCTIONS OF RIBOSOME RELEASE FACTOR	HARVARD UNIVERSITY	BOSTON MASSACHUSETTS	82	06-83	1	MBC	38,825	76,019

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5	R01 GM22057-08 22300	KENNEDY, EUGENE P BIOGENESIS AND FUNCTION OF MEMBRANES	HARVARD UNIVERSITY	BOSTON MASSACHUSETTS	82	04-83	2	MBC 83,821	161,803
5	R01 GM22130-08 22400	BRILL, WINSTON J MOLYBDENUM METABOLISM	UNIVERSITY OF WISCONSIN MADISON	MADISON WISCONSIN	82	07-83	0	MBC 64,158	91,746
2	R01 GM22131-08 21750	SOMERVILLE, RONALD L REGULATORY MECHANISMS IN TRYPTOPHAN BIOSYNTHESIS	PURDUE UNIVERSITY WEST LAFAYETTE	WEST LAFAYETTE INDIANA	82	06-83	2	MBC 91,475	122,806
5	R01 GM22200-08 21310	BRUENN, JEREMY A SEQUENCING OF YEAST KILLER-FACTOR RNAS	STATE UNIVERSITY OF NEW YORK AT BUFFALO	BUFFALO NEW YORK	82	04-83	2	MBC 59,439	88,624
5	R01 GM22238-06 21200	FRALICK, JOE A CHROMOSOME REPLICATION IN ESCHERICHIA COLI	TEXAS TECH UNIVERSITY	LUBBOCK TEXAS	82	08-83	0	MBC 33,837	43,388
5	R01 GM22299-08 21700	NEWTON, AUSTIN REGULATION OF DEVELOPMENT IN CAULOBACTER CRESCENTUS	PRINCETON UNIVERSITY	PRINCETON NEW JERSEY	82	08-83	3	MBC 82,214	134,831
5	R01 GM22323-08 22300	EPSTEIN, WOLFGANG BIOCHEMICAL STUDIES OF ATP-DRIVEN BACTERIAL TRANSPORT	UNIVERSITY OF CHICAGO	CHICAGO ILLINOIS	82	08-83	2	MBC 67,017	111,189
5	R01 GM22466-07 22400	NUNN, WILLIAM D CONTROL OF LIPID METABOLISM IN ESCHERICHIA COLI	UNIVERSITY OF CALIFORNIA IRVINE	IRVINE CALIFORNIA	82	07-83	1	MBC 51,596	71,353
3	R01 GM22466-07S1 22400	NUNN, WILLIAM D CONTROL OF LIPID METABOLISM IN ESCHERICHIA COLI	UNIVERSITY OF CALIFORNIA IRVINE	IRVINE CALIFORNIA	82	07-83	1	MBC 26,505	36,974
5	R01 GM22562-06 21200	COSLOY, SHARON D MOLECULAR MECHANISM OF RECOMBINATION OF E COLI K12	CITY COLLEGE OF NEW YORK	NEW YORK NEW YORK	82	11-82	0	MBC 39,894	64,110
5	R01 GM22619-07 21750	KRAKOW, JOSEPH S STUDIES ON THE CYCLIC AMP RECEPTOR PROTEIN OF E. COLI	HUNTER COLLEGE	NEW YORK NEW YORK	82	03-83	2	MBC 51,646	83,615
5	R01 GM22830-07 21750	PLATT, TERRY REGULATORY SEQUENCES IN TRP OPERON MRNA OF E COLI	YALE UNIVERSITY	NEW HAVEN CONNECTICUT	82	02-83	1	MBC 111,973	176,917

TABLE-3 RESEARCH GRANTS ACTIVE AS OF 09-30-82 BY INITIAL REVIEW GROUP

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5	R01 GM22961-06 22300	KNOWLES, JEREMY R TRANSPORT ACROSS BIOLOGICAL MEMBRANES	HARVARD UNIVERSITY	CAMBRIDGE	MASSACHUSETTS	82	11-82	3	MBC	53,175	81,890
5	R01 GM23105-07 22450	FILLINGAME, ROBERT H PROTON-TRANSLOCATING SECTOR OF E. COLI ATPASE COMPLEX	UNIVERSITY OF WISCONSIN MADISON	MADISON	WISCONSIN	82	06-83	1	MBC	54,661	76,940
3	R01 GM23105-07S1 22450	FILLINGAME, ROBERT H PROTON-TRANSLOCATING SECTOR OF E. COLI ATPASE COMPLEX	UNIVERSITY OF WISCONSIN MADISON	MADISON	WISCONSIN	82	06-83	1	MBC	26,936	36,922
5	R01 GM23182-07 21750	CALHOUN, DAVID H CONTROL OF GENE EXPRESSION BY AN ALLOSTERIC ENZYME	MOUNT SINAI SCHOOL OF MEDICINE	NEW YORK	NEW YORK	82	06-83	1	MBC	46,322	67,095
5	R01 GM23193-06 22400	ALLEN, CHARLES M, JR MECHANISM AND REGULATION OF UNDECAPRENOL BIOSYNTHESIS	UNIVERSITY OF FLORIDA	GAINESVILLE	FLORIDA	82	06-83	0	MBC	41,340	60,770
5	R01 GM23292-06 22500	MOSTELLER, RAYMOND D REGULATION OF PROTEIN DEGRADATION IN ESCHERICHIA COLI	UNIVERSITY OF SOUTHERN CALIFORNIA	LOS ANGELES	CALIFORNIA	82	03-83	0	MBC	54,980	80,271
5	R01 GM23377-07 22300	WICKNER, WILLIAM T THE ASSEMBLY OF PROTEINS INTO BIOLOGICAL MEMBRANES	UNIVERSITY OF CALIFORNIA LOS ANGELES	LOS ANGELES	CALIFORNIA	82	06-83	1	MBC	86,551	119,659
5	R01 GM23441-06 22200	KAISER, A DALE CONTROL OF MULTICELLULAR DEVELOPMENT IN MYXOBACTERIA	STANFORD UNIVERSITY	STANFORD	CALIFORNIA	82	12-82	2	MBC	71,945	111,208
5	R01 GM23608-06 21200	MARSH, ROBERT C STRUCTURE OF CHROMOSOME REPLICATION ORIGINS	UNIVERSITY OF TEXAS DALLAS	RICHARDSON	TEXAS	82	12-82	2	MBC	46,164	62,321
5	R01 GM23671-06 21750	PFAHL, MAGNUS GENETIC ANALYSIS OF LAC REPRESSOR AND OPERATOR	SALK INSTITUTE FOR BIOLOGICAL STUDIES	LA JOLLA	CALIFORNIA	82	12-82	2	MBC	57,234	92,099
5	R01 GM23917-06 21200	GEORGOPOULOS, CONSTANTINE P BACTERIAL FUNCTIONS IN PHAGE DEVELOPMENT	UNIVERSITY OF UTAH	SALT LAKE CITY	UTAH	82	03-83	2	MBC	86,173	124,951
5	R01 GM23999-06 21320	SYPHERD, PAUL S MODIFICATION OF ELONGATION FACTOR-1 DURING MORPHOGENESIS	UNIVERSITY OF CALIFORNIA IRVINE	IRVINE	CALIFORNIA	82	06-83	2	MBC	71,124	99,218

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5	R01 GM24009-05 21750	TORRIANI-GORINI, ANNAMARIA PHOSPHATE REGULATION OF E COLI: ALKALINE PHOSPHATASE	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	CAMBRIDGE MASSACHUSETTS	82	03-83	3	MBC		72,563	109,711
5	R01 GM24455-06 21750	HALL, DWIGHT H ORGANIZATION AND EXPRESSION OF THE GENOME OF PHAGE T4	GEORGIA INSTITUTE OF TECHNOLOGY	ATLANTA GEORGIA	82	02-83	0	MBC		54,745	83,480
5	R01 GM24461-06 21310	GUTERMAN, SONIA K RHO PROTEIN INTERACTION WITH RNA AND RNA POLYMERASE	BOSTON UNIVERSITY	BOSTON MASSACHUSETTS	82	03-83	0	MBC		49,986	77,328
2	R01 GM24658-12 22400	ZALKIN, HOWARD GLUTAMINE AMIDOTRANSFERASE STRUCTURE/FUNCTION/REGULATION	PURDUE UNIVERSITY WEST LAFAYETTE	WEST LAFAYETTE INDIANA	82	06-83	4	MBC		104,504	137,158
5	R01 GM24751-06 21750	SQUIRES, CATHERINE L FUSION OF THE RIBOSOMAL RNA PROMOTOR TO OTHER OPERONS	COLUMBIA UNIVERSITY	NEW YORK NEW YORK	82	03-83	1	MBC		59,477	99,034
5	R01 GM24915-21 21200	GOODGAL, SOL H TRANSFORMATION IN HAEMOPHILUS	UNIVERSITY OF PENNSYLVANIA	PHILADELPHIA PENNSYLVANIA	82	06-83	2	MBC		82,337	134,231
2	R01 GM25030-04 22300	WILSON, DAVID B ISOLATION AND CHARACTERIZATION OF THE S GENE PRODUCT	CORNELL UNIVERSITY ITHACA	ITHACA NEW YORK	82	06-83	2	MBC		64,549	93,873
5	R01 GM25047-05 22300	DOWHAN, WILLIAM MEMBRANE PROTEIN BIOSYNTHESIS & ASSEMBLY	UNIVERSITY OF TEXAS HLTH SCI CTR HOUSTON	HOUSTON TEXAS	82	03-83	1	MBC		59,344	81,515
5	R01 GM25176-03 21700	BORGIA, PETER T REGULATORY ROLE OF CYCLIC NUCLEOTIDES IN MUCOR	SOUTHERN ILLINOIS UNIVERSITY CARBONDALE	CARBONDALE ILLINOIS	80	07-83	0	MBC		22,764	30,148
2	R01 GM25522-04 21280	COHEN, SEYMOUR S POLYAMINES IN VIRUS INFECTION OF CHLOROPLASTS	STATE UNIVERSITY NEW YORK STONY BROOK	STONY BROOK NEW YORK	82	08-83	2	MBC		63,870	93,202
5	R01 GM25527-05 22300	AGABIAN, NINA M REGULATION OF CELL SURFACE DEVELOPMENT IN CAULOBACTER	UNIVERSITY OF WASHINGTON	SEATTLE WASHINGTON	82	06-83	3	MBC		75,299	99,711
5	R01 GM25735-04 22400	CRAWFORD, IRVING P MUTATIONAL PERTURBATION OF SUBUNIT INTERACTIONS	UNIVERSITY OF IOWA	IOWA CITY IOWA	81	03-83	0	MBC		56,916	78,430

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5	R01 GM25854-03 21750	TORRIANI-GORINI, ANNAMARIA GENETICS OF ALKALINE PHOSPHATASE EXPRESSION IN E. COLI	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	CAMBRIDGE	MASSACHUSETTS	81	11-82	0	MBC		41,888	64,602
5	R01 GM25921-03 21250	SIEGEL, ELI C GENETIC CONTROL OF MUTATION IN ESCHERICHIA COLI	TUFTS UNIVERSITY	MEDFORD	MASSACHUSETTS	81	12-82	0	MBC		45,445	69,424
5	R01 GM25948-03 21200	BREMER, HANS CONTROL OF DNA REPLICATION IN BACTERIA	UNIVERSITY OF TEXAS DALLAS	RICHARDSON	TEXAS	81	08-83	0	MBC		47,654	63,856
2	R01 GM26100-04 21750	WHITELEY, HELEN R PHAGE-INFECTED B. SUBTILIS: PROMOTER STUDIES	UNIVERSITY OF WASHINGTON	SEATTLE	WASHINGTON	82	11-82	3	MBC		38,723	51,206
5	R01 GM26154-12 21750	STEITZ, JOAN A MOLECULAR MECHANISMS IN GENE EXPRESSION	YALE UNIVERSITY	NEW HAVEN	CONNECTICUT	82	04-83	1	MBC		110,295	174,266
5	R01 GM26156-03 22400	CRONAN, JOHN E, JR PROTEIN LIPID INTERACTION	UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN	URBANA	ILLINOIS	82	12-82	0	MBC		25,908	35,960
5	R01 GM26183-03 21200	MOLINEUX, IAN J STUDIES OF DNA-BINDING PROTEINS AND T7 DNA SYNTHESIS	UNIVERSITY OF TEXAS AUSTIN	AUSTIN	TEXAS	81	03-83	0	MBC		52,361	68,980
5	R01 GM26248-04 22300	NIEDERMAN, ROBERT A ASSEMBLY OF AN ENERGY TRANSDUCING MEMBRANE SYSTEM	RUTGERS THE STATE UNIV NEW BRUNSWICK	NEW BRUNSWICK	NEW JERSEY	82	03-83	1	MBC		58,500	92,430
5	R01 GM26293-03 22400	BAUERLE, RONALD H GENETIC ANALYSIS OF THE ASSEMBLY OF AN ENZYME COMPLEX	UNIVERSITY OF VIRGINIA CHARLOTTESVILLE	CHARLOTTESVILLE	VIRGINIA	82	03-83	0	MBC		54,787	79,441
5	R01 GM26355-04 21200	COHEN, STANLEY N REPLICATION AND TRANSFER OF BACTERIAL PLASMIDS	STANFORD UNIVERSITY	STANFORD	CALIFORNIA	82	06-83	1	MBC		98,734	156,000
5	R01 GM26399-03 21200	BOTT, KENNETH F CHARACTERIZATION OF THE B SUBTILIS CHROMOSOME ORIGIN	UNIVERSITY OF NORTH CAROLINA CHAPEL HILL	CHAPEL HILL	NORTH CAROLINA	81	07-83	0	MBC		36,914	50,740
2	R01 GM26429-17 22200	HELMSTETTER, CHARLES E BIOCHEMISTRY AND RADIATION EFFECT DURING THE CELL CYCLE	ROSWELL PARK MEMORIAL INSTITUTE	BUFFALO	NEW YORK	82	06-83	2	MBC		55,320	78,681

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5	R01 GM26517-03 21320	SARKAR, NILIMA FUNCTION OF POLYADENYLATE SEQUENCES IN BACTERIAL RNA	BOSTON BIOMEDICAL RESEARCH INSTITUTE	BOSTON MASSACHUSETTS	81	12-82	0	MBC	42,551	62,818
5	R01 GM26756-03 21750	SCHMIDT, FRANCIS J GENE STRUCTURE OF AN RNA PROCESSING ENZYME	UNIVERSITY OF MISSOURI COLUMBIA	COLUMBIA MISSOURI	82	03-83	0	MBC	34,995	44,794
5	R01 GM26843-03 22200	INOUYE, MASAYORI MORPHOGENESIS AND GENE EXPRESSION	STATE UNIVERSITY NEW YORK STONY BROOK	STONY BROOK NEW YORK	82	03-83	0	MBC	62,383	94,084
5	R01 GM27068-03 21750	ROTH, JOHN R GENETIC ANALYSIS OF BACTERIAL CHROMOSOME STRUCTURE	UNIVERSITY OF UTAH	SALT LAKE CITY UTAH	82	11-82	0	MBC	36,554	52,103
5	R01 GM27077-03 21280	PLATE, CHARLES A GENETICS & BIOCHEMISTRY OF ENERGY COUPLING IN E COLI	NORTHWESTERN UNIVERSITY	CHICAGO ILLINOIS	82	12-82	0	MBC	44,077	60,626
5	R01 GM27111-03 21200	BENDER, ROBERT A CONTROL OF DNA REPLICATION IN CAULOBACTER DEVELOPMENT	UNIVERSITY OF MICHIGAN AT ANN ARBOR	ANN ARBOR MICHIGAN	82	12-82	0	MBC	40,891	64,608
5	R01 GM27219-03 21200	BERNSTEIN, HARRIS DNA REPLICATION AND REPAIR IN PHAGE T4	UNIVERSITY OF ARIZONA	TUCSON ARIZONA	82	11-82	0	MBC	58,748	84,010
5	R01 GM27242-03 21200	SALAS, MARGARITA DNA-PROTEIN COMPLEX OF BACILLUS SUBTILIS PHAGE 29	AUTONOMOUS UNIVERSITY OF MADRID	MADRID SPAIN	82	12-82	0	MBC	34,771	34,771
5	R01 GM27253-03 21780	MURPHY, ELLEN SITE SPECIFIC RECOMBINATION IN STAPHYLOCOCCUS AUREUS	PUBLIC HLTH RES INST OF THE CITY OF NY	NEW YORK NEW YORK	82	11-82	0	MBC	57,200	79,462
5	R01 GM27263-03 21320	NAKAMOTO, TOKUMASA SELECTION OF MRNA INITIATOR SITE IN BACTERIAL PROTEIN	UNIVERSITY OF CHICAGO	CHICAGO ILLINOIS	82	11-82	0	MBC	68,285	107,207
5	R01 GM27307-03 21750	ARTZ, STANLEY W GENE REGULATORY MECHANISMS IN AMINO ACID BIOSYNTHESIS	UNIVERSITY OF CALIFORNIA DAVIS	DAVIS CALIFORNIA	82	11-82	0	MBC	70,457	92,299
5	R01 GM27472-03 22300	HEDGPETH, JOE PROTEIN SECRETION STUDIES WITH PLASMID-CLONED GENES	UNIVERSITY OF CALIFORNIA SAN FRANCISCO	SAN FRANCISCO CALIFORNIA	82	12-82	0	MBC	44,322	57,752

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5	R01 GM27622-03 21320	CHAMPNEY, WILLIAM S PROTEIN SYNTHESIS MUTANTS OF E COLI	UNIVERSITY OF TEXAS SAN ANTONIO	SAN ANTONIO TEXAS	81	06-83	0	MBC 47,668	65,586
5	R01 GM27664-03 21750	MORGAN, EDWARD A NEW APPROACHES TO ASPECTS OF TRNA AND RRNA IN E COLI	STATE UNIVERSITY OF NEW YORK AT BUFFALO	BUFFALO NEW YORK	82	05-83	0	MBC 41,058	59,118
5	R01 GM27711-03 21320	GOLDMAN, EMANUEL ANALYSIS OF TRNA CODING BY PROTEIN SYNTHESIS IN VITRO	UNIVERSITY OF MEDICINE & DENTISTRY OF NJ	NEWARK NEW JERSEY	82	03-83	0	MBC 50,525	84,648
5	R01 GM27727-03 21200	IHLER, GARRET M MECHANISM OF DNA REPLICATION OF PHAGE LAMBDA	TEXAS AGRI AND MECH UNIV	COLLEGE STATION COLLEGE STATION TEXAS	82	03-83	0	MBC 33,196	42,823
5	R01 GM27731-03 21200	LIU, LEROY F FUNCTIONAL AND MECHANISTIC STUDIES OF DNA TOPOISOMERASES	JOHNS HOPKINS UNIVERSITY	BALTIMORE MARYLAND	82	03-83	0	MBC 44,652	66,978
5	R01 GM27750-03 22450	SPUDICH, JOHN L FUNCTION OF BACTERIORHODOPSIN IN SENSORY TRANSDUCTION	YESHIVA UNIVERSITY	NEW YORK NEW YORK	82	03-83	0	MBC 46,072	84,404
5	R01 GM27766-03 22400	O'CONNOR, MARY L A STUDY OF THE REGULATION OF METHANE OXIDATION	UNIVERSITY OF WASHINGTON	SEATTLE WASHINGTON	82	03-83	0	MBC 36,284	48,279
5	R01 GM27774-03 21600	ROBBERSON, DONALD L SEQUENCE SPECIFIC DNA-PROTEIN INTERACTION	UNIVERSITY OF TEXAS SYSTEM CANCER CENTER	HOUSTON TEXAS	82	03-83	0	MBC 12,286	17,016
5	R01 GM27787-02 21100	FRIEDMAN, STANLEY THE EFFECT OF 5-AZACYTIDINE ON THE METHYLATION OF DNA	DOWNSTATE MEDICAL CENTER	NEW YORK NEW YORK	81	03-83	0	MBC 42,239	60,312
5	R01 GM27813-03 21600	DUNCAN, BRUCE K ENZYMES AND MUTANTS OF DNA METABOLISM	INSTITUTE FOR CANCER RESEARCH	PHILADELPHIA PENNSYLVANIA	82	03-83	0	MBC 37,030	53,710
5	R01 GM27861-14 21750	LANDY, ARTHUR CONTROL OF SYNTHESIS AND FUNCTION OF NUCLEIC ACID	BROWN UNIVERSITY	PROVIDENCE RHODE ISLAND	82	05-83	2	MBC 81,602	126,690
5	R01 GM27896-03 21750	LIEBKE, E HOPE REGULATION OF RRN OPERON EXPRESSION: MUTANT ANALYSIS	YALE UNIVERSITY	NEW HAVEN CONNECTICUT	82	07-83	0	MBC 34,654	57,770

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5	R01 GM28027-02 21600	SHINE, JOHN BACTERIAL GENES INVOLVED IN SYMBIOTIC NITROGEN FIXATION	AUSTRALIAN NATIONAL UNIVERSITY	CANBERRA AUSTRALIA	81	11-82	1	MBC	57,322	57,322
5	R01 GM28035-03 22300	ROCK, CHARLES O REGULATION OF MEMBRANE PHOSPHOLIPID STRUCTURE	ST. JUDE CHILDREN'S RESEARCH HOSPITAL	MEMPHIS TENNESSEE	82	06-83	0	MBC	48,740	66,790
5	R01 GM28036-03 22300	LUEKING, DONALD R THE REGULATION OF PROCARYOTIC PHOSPHOLIPID SYNTHESIS	TEXAS AGRI AND MECH UNIV	COLLEGE STATION COLLEGE STATION TEXAS	82	07-83	0	MBC	30,618	39,497
5	R01 GM28057-03 21750	WU, FELICIA Y ROLE OF METAL IN GENE EXPRESSION	STATE UNIVERSITY NEW YORK	STONY BROOK STONY BROOK NEW YORK	82	08-83	0	MBC	52,052	77,542
5	R01 GM28170-03 22300	ORR, GEORGE A PHOSPHOLIPID ANALOGS AND MEMBRANE FUNCTION	YESHIVA UNIVERSITY	NEW YORK NEW YORK	82	06-83	0	MBC	58,738	109,253
5	R01 GM28211-03 21280	SUMMERS, ANNE O REGULATION AND STRUCTURE OF THE MER OPERON	UNIVERSITY OF GEORGIA	ATHENS GEORGIA	82	11-82	0	MBC	52,055	71,680
5	R01 GM28226-03 22400	JACOBSON, GARY R THE STRUCTURE OF THE D-MANNITOL PERMEASE OF E COLI	BOSTON UNIVERSITY	BOSTON MASSACHUSETTS	82	06-83	0	MBC	34,009	61,080
5	R01 GM28362-03 21750	ITO, JUNETSU STUDIES OF SPORULATION IN BACILLUS SUBTILIS	UNIVERSITY OF ARIZONA	TUCSON ARIZONA	82	03-83	0	MBC	63,225	87,101
5	R01 GM28407-11 21750	SMITH, ISSAR GENETICS OF THE B SUBTILIS TRANSLATIONAL APPARATUS	PUBLIC HLTH RES INST OF THE CITY OF NY	NEW YORK NEW YORK	82	06-83	0	MBC	63,692	87,643
5	R01 GM28454-02 22450	KRULWICH, TERRY A ATP SYNTHESIS AT LOW PROTONMOTIVE FORCES	MOUNT SINAI SCHOOL OF MEDICINE	NEW YORK NEW YORK	82	08-83	1	MBC	65,159	97,087
5	R01 GM28550-03 21200	GRINDLEY, NIGEL D STRUCTURE AND FUNCTION OF E COLI PO1A GENE	YALE UNIVERSITY	NEW HAVEN CONNECTICUT	82	04-83	0	MBC	59,994	94,791
5 1	R01 GM28760-03 21750	KUSHNER, SIDNEY R FUNCTIONAL EXPRESSION OF EUKARYOTIC DNA IN E COLI	UNIVERSITY OF GEORGIA	ATHENS GEORGIA	82	03-83	0	MBC	64,336	87,083

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5	R01 GM28811-03 22300	WU, HENRY C BIOCHEMISTRY OF CELL DIVISION IN BACTERIA	U.S. UNIFORMED SERVICES	UNIV OF HLTH SCI BETHESDA	MARYLAND	82	07-83	2	MBC 73,703	73,703
5	R01 GM28864-02 22450	WEISS, RICHARD L METABOLIC ORGANIZATION IN NEUROSPORA	UNIVERSITY OF CALIFORNIA	LOS ANGELES LOS ANGELES	CALIFORNIA	82	03-83	1	MBC 66,520	87,141
5	R01 GM28923-12 21200	COX, EDWARD C E COLI MUTATOR GENES	PRINCETON UNIVERSITY	PRINCETON	NEW JERSEY	82	07-83	0	MBC 68,686	112,645
5	R01 GM28927-03 21320	TAI, PHANG-CHENG SELECTIVE ACTIONS OF ANTIBIOTICS ON RIBOSOMES	HARVARD UNIVERSITY	BOSTON	MASSACHUSETTS	82	08-83	1	MBC 37,258	72,951
5	R01 GM28952-02 21320	BERGET, PETER B GENETIC ANALYSIS OF STRUCTURE FORMATION	UNIVERSITY OF TEXAS HLTH SCI CTR HOUSTON	HOUSTON	TEXAS	82	03-83	1	MBC 52,921	71,359
5	R01 GM29217-06 21780	ZUBAY, GEOFFREY L TRANSCRIPTIONAL CONTROL IN INFECTIOUS PLASMIDS	COLUMBIA UNIVERSITY	NEW YORK	NEW YORK	82	08-83	0	MBC 63,957	108,535
5	R01 GM29244-03 22300	GILVARG, CHARLES STRUCTURE AND SYNTHESIS OF THE BACTERIAL CELL WALL	PRINCETON UNIVERSITY	PRINCETON	NEW JERSEY	82	08-83	0	MBC 37,700	59,908
5	R01 GM29245-03 21750	DOWNEY, RONALD J BIOSYNTHESIS OF NITRATE REDUCTASE IN FUNGI	OHIO UNIVERSITY ATHENS	ATHENS	OHIO	82	08-83	0	MBC 29,842	39,541
1	R01 GM29408-01A1 21200	HARI, V STRUCTURE AND REPLICATION OF POTYVIRUSES	WAYNE STATE UNIVERSITY	DETROIT	MICHIGAN	82	08-83	3	MBC 46,872	64,634
5	R01 GM29481-02 22200	TAYLOR, BARRY L SENSORY TRANSDUCTION IN BACTERIA	LOMA LINDA UNIVERSITY	LOMA LINDA	CALIFORNIA	82	08-83	1	MBC 59,622	85,852
5	R01 GM29498-02 22300	LANYI, JANOS K CHARACTERIZATION OF A SODIUM PUMP IN H. HALOBIUM	UNIVERSITY OF CALIFORNIA	IRVINE IRVINE	CALIFORNIA	82	06-83	1	MBC 52,380	71,688
5	R01 GM29569-02 22400	WOOD, HARLAND G ROLE OF INORGANIC POLYPHOSPHATE IN METABOLISM	CASE WESTERN RESERVE UNIVERSITY	CLEVELAND	OHIO	82	06-83	3	MBC 41,315	59,676

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1	R01 GM29776-01 22200	SUSSMAN, MAURICE BIOCHEMISTRY/GENETICS OF MORPHOGENESIS IN D DISCOIDEUM	UNIVERSITY OF PITTSBURGH	PITTSBURGH	PENNSYLVANIA	82	01-83	2	MBC	65,435	91,144
5	R01 GM29798-02 22300	RANDALL, LINDA L EXPORT OF PROTEINS IN ESCHERICHIA COLI	WASHINGTON STATE UNIVERSITY	PULLMAN	WASHINGTON	82	03-83	0	MBC	57,370	82,737
5	R01 GM29830-02 22300	MC MAHON, DANIEL S DICTYOSTELIUM DISCOIDEUM PLASMA MEMBRANES	WASHINGTON STATE UNIVERSITY	PULLMAN	WASHINGTON	82	03-83	1	MBC	75,990	110,186
1	R01 GM29843-01 22300	HONG, JEN-SHIANG BIOCHEMISTRY AND GENETICS OF MEMBRANE FUNCTIONS	BOSTON BIOMEDICAL RESEARCH INSTITUTE	BOSTON	MASSACHUSETTS	82	11-82	4	MBC	98,523	140,289
5	R01 GM29851-02 21750	OESCHGER, MAX P TS NONSENSE SUPPRESSORS OF E COLI K-12	JOHNS HOPKINS UNIVERSITY	BALTIMORE	MARYLAND	82	06-83	0	MBC	62,580	93,870
1	R01 GM29909-01 AI 22400	GIBSON, DAVID T MECHANISMS OF ENZYMATIC OXYGEN FIXATION	UNIVERSITY OF TEXAS AUSTIN	AUSTIN	TEXAS	82	11-82	4	MBC	88,842	114,323
1	R01 GM29963-01 22300	HAZELBAUER, GERALD L MOLECULAR STUDIES OF CHEMORECEPTION	WASHINGTON STATE UNIVERSITY	PULLMAN	WASHINGTON	82	03-83	2	MBC	76,892	107,443
5	R01 GM30228-02 21320	POYTON, ROBERT O PATHWAYS OF PROTEIN TRANSPORT INTO CELL ORGANELLES	UNIVERSITY OF COLORADO AT BOULDER	BOULDER	COLORADO	82	06-83	2	MBC	68,205	93,823
5	R01 GM30395-02 21100	ITAKURA, KEIICHI PEPTIDE HORMONE PRODUCTION IN E COLI	CITY OF HOPE RESEARCH INSTITUTE	DUARTE	CALIFORNIA	82	05-83	1	MBC	63,940	105,565
1	R01 GM30588-01 21320	JACOBSON, LEWIS A BIOCHEMISTRY OF TRANSLATION CONTROL IN E COLI	UNIVERSITY OF PITTSBURGH	PITTSBURGH	PENNSYLVANIA	82	03-83	1	MBC	35,079	50,460
1	R01 GM30786-01 21750	HEARST, JOHN E DIFFERENTIATION & GENETICS OF A PHOTOSYNTHETIC MEMBRANE	UNIVERSITY OF CALIFORNIA BERKELEY	BERKELEY	CALIFORNIA	82	07-83	2	MBC	70,000	99,330
1	R01 GM30868-01 22400	DANIELS, LACY CARBON AND ELECTRON TRANSFER IN BACTERIAL METHANOGENESIS	UNIVERSITY OF IOWA	IOWA CITY	IOWA	82	06-83	2	MBC	79,041	97,297

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1	R01 GM31023-01 21700	LATEN, HOWARD M CYTOKININ FUNCTION AND SYNTHESIS IN YEAST	LOYOLA UNIVERSITY OF CHICAGO	CHICAGO ILLINOIS	82	08-83	2	52,724	MBC 72,492
1	R01 GM31707-01 22300	SCHINDLER, MELVIN S LATERAL MOBILITY IN THE OUTER MEMBRANE OF BACTERIA	MICHIGAN STATE UNIVERSITY	EAST LANSING MICHIGAN	82	07-83	2	58,600	MBC 70,490
1	R01 GM31708-01 22400	STORM, DANIEL R CALMODULIN REGULATION OF B PERTUSSIS ADENYLATE CYCLASE	UNIVERSITY OF WASHINGTON	SEATTLE WASHINGTON	82	08-83	2	70,979	MBC 89,332
9	R01 GM31709-16 22300	MINDICH, LEONARD E CELL MEMBRANE SYNTHESIS IN THE CONTROL OF GROWTH	PUBLIC HLTH RES INST OF THE CITY OF NY	NEW YORK NEW YORK	82	07-83	4	120,910	MBC 168,161
***	0	* CENTERS						0	0
***	160	NONCENTERS						10,085,448	14,840,002
***	160	TOTAL						10,085,448	14,840,002
2	R01 GM04738-26A1 21600	RIS, HANS SUBMICROSCOPIC ORGANIZATION OF CHROMOSOMES	UNIVERSITY OF WISCONSIN MADISON	MADISON WISCONSIN	82	06-83	1	55,960	MBY 80,023
5	R01 GM12427-19 21600	GALL, JOSEPH G THE ORGANIZATION OF ANIMAL CELL NUCLEI	YALE UNIVERSITY	NEW HAVEN CONNECTICUT	82	08-83	1	119,450	MBY 197,276
5	R01 GM14642-15 22250	ROSENBAUM, JOEL L SYNTHESIS AND ASSEMBLY OF FLAGELLAR PROTEINS	YALE UNIVERSITY	NEW HAVEN CONNECTICUT	82	07-83	3	115,512	MBY 191,748
5	R01 GM14957-15 21320	DUBIN, DONALD T R-RNA & RIBOSOME SYNTHESIS IN BACTERIA & ANIMAL CELLS	RUTGERS MEDICAL SCHOOL	PISCATAWAY NEW JERSEY	82	01-83	3	74,965	MBY 123,071

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5	R01 GM15399-14 21320	MAITRA, UMADAS ENZYMATIC SYNTHESIS OF BIOLOGICALLY ACTIVE MACROMOLECULE	YESHIVA UNIVERSITY	NEW YORK / NEW YORK	82	04-83	1	MBY 100,002	183,811
5	R01 GM15438-13 21320	O'BRIEN, THOMAS W CHARACTERIZATION OF MAMMALIAN MITOCHONDRIAL RIBOSOMES	UNIVERSITY OF FLORIDA	GAINESVILLE / FLORIDA	81	11-82	0	MBY 44,664	63,163
5	R01 GM17129-12 21320	MOLLER, HARRY F, JR RIBOSOME STRUCTURE AND FUNCTION	UNIVERSITY OF CALIFORNIA SANTA CRUZ	SANTA CRUZ / CALIFORNIA	82	04-83	2	MBY 109,231	143,093
5	R01 GM17724-12 22300	WIDNELL, CHRISTOPHER C PLASMA MEMBRANE STRUCTURE, FUNCTION, AND BIOGENESIS	UNIVERSITY OF PITTSBURGH	PITTSBURGH / PENNSYLVANIA	82	06-83	3	MBY 92,576	139,416
5	R01 GM18006-11 22300	SCHNAITMAN, CARL A CELL SURFACE MEMBRANE PROTEINS	UNIVERSITY OF VIRGINIA CHARLOTTESVILLE	CHARLOTTESVILLE / VIRGINIA	82	03-83	2	MBY 54,478	78,588
5	R01 GM18538-12 22200	KUEHN, GLENN D POLYAMINES AND GENE CONTROL IN PHYSARUM POLYCEPHALUM	NEW MEXICO STATE UNIVERSITY LAS CRUCES	LAS CRUCES / NEW MEXICO	82	08-83	2	MBY 45,449	71,733
5	R01 GM18775-11 21320	RAVEL, JOANNE M FACTORS CONTROLLING PROTEIN SYNTHESIS	UNIVERSITY OF TEXAS AUSTIN	AUSTIN / TEXAS	82	03-83	3	MBY 64,192	86,344
5	R01 GM18858-10 22300	GETZ, GODFREY S LIPIDS AND CONTROL OF MITOCHONDRIAL BIOGENESIS	UNIVERSITY OF CHICAGO	CHICAGO / ILLINOIS	82	12-82	1	MBY 85,346	130,737
5	R01 GM20052-09 21320	DELIHAS, NICHOLAS STRUCTURE AND FUNCTION OF 5S RNA IN SITU	STATE UNIVERSITY NEW YORK STONY BROOK	STONY BROOK / NEW YORK	82	08-83	0	MBY 29,460	43,406
5	R01 GM20113-09 22300	PERACCHIA, CAMILLO STRUCTURE & FUNCTION IN LOW RESISTANCE JUNCTIONS	UNIVERSITY OF ROCHESTER	ROCHESTER / NEW YORK	82	02-83	0	MBY 71,657	116,934
5	R01 GM20147-10 21320	PACE, NORMAN R METABOLISM OF RNA IN PROKARYOTES AND EUKARYOTES	NATIONAL JEWISH HOSPITAL & RESEARCH CTR	DENVER / COLORADO	82	06-83	0	MBY 133,521	192,512
2	R01 GM20261-09 21320	GERBI, SUSAN A FINE STRUCTURE OF RIBOSOMAL RNA	BROWN UNIVERSITY	PROVIDENCE / RHODE ISLAND	82	03-83	4	MBY 90,410	138,784

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2	R01 GM20277-10 22300	SABATINI, DAVID D ATTACHMENT OF RIBOSOMES TO MICROSOMAL MEMBRANES	NEW YORK UNIVERSITY	NEW YORK / NEW YORK	82	12-82	4	MBY 189,377	266,509
5	R01 GM20470-10 21280	BOGORAD, LAWRENCE MOLECULAR MECHANISMS OF INTRACELLULAR INTEGRATION	HARVARD UNIVERSITY	CAMBRIDGE / MASSACHUSETTS	82	05-83	0	MBY 66,856	102,958
5	R01 GM20644-10 22250	STEPHENS, RAYMOND E THE FORMATION AND FUNCTION OF MICROTUBULES	MARINE BIOLOGICAL LABORATORY	WOODS HOLE / MASSACHUSETTS	82	08-83	0	MBY 61,954	123,908
5	R01 GM21346-09 21600	SCHMID, CARL W, JR REPETITIVE DNA SEQUENCES IN THE HUMAN GENOME	UNIVERSITY OF CALIFORNIA DAVIS	DAVIS / CALIFORNIA	82	08-83	3	MBY 56,640	77,484
2	R01 GM21351-09 21280	HALLICK, RICHARD B GENE EXPRESSION IN CELL ORGANELLES	UNIVERSITY OF COLORADO AT BOULDER	BOULDER / COLORADO	82	06-83	4	MBY 62,244	84,107
5	R01 GM21357-08 21320	SCHLESSINGER, DAVID PROCESSING & TURNOVER OF MAMMALIAN CELL RIBOSOMAL RNA	WASHINGTON UNIVERSITY	SAINT LOUIS / MISSOURI	82	11-82	3	MBY 72,668	112,635
5	R01 GM21376-05 21700	BAGSHAW, JOSEPH C TRANSCRIPTIONAL REGULATION IN EMBRYONIC DEVELOPMENT	WAYNE STATE UNIVERSITY	DETROIT / MICHIGAN	81	08-83	0	MBY 51,929	70,969
5	R01 GM21424-08 21320	TRAUGH, JOLINDA A EFFECTS OF RIBOSOME PHOSPHORYLATION ON TRANSLATION	UNIVERSITY OF CALIFORNIA RIVERSIDE	RIVERSIDE / CALIFORNIA	82	06-83	0	MBY 61,453	83,995
5	R01 GM21527-08 22250	LINCK, RICHARD W FLAGELLAR MICROTUBULES: MOLECULAR STRUCTURE-FUNCTION	HARVARD UNIVERSITY	BOSTON / MASSACHUSETTS	82	12-82	1	MBY 78,425	151,161
5	R01 GM21595-08 21750	PEDERSON, THORU GENE TRANSCRIPTION IN EUKARYOTES	WORCESTER FDN FOR EXPER BIOLOGY	SHREWSBURY / MASSACHUSETTS	82	11-82	1	MBY 127,732	201,855
5	R01 GM21823-08 22200	HASELKORN, ROBERT DIFFERENTIATION IN NITROGEN-FIXING BLUE-GREEN ALGAE	UNIVERSITY OF CHICAGO	CHICAGO / ILLINOIS	82	04-83	0	MBY 73,964	113,375
5	R01 GM21891-08 21750	DAVIS, RONALD W CELL REGULATION: BIOCHEMICALLY ISOLATED DNA SEGMENTS	STANFORD UNIVERSITY	STANFORD / CALIFORNIA	82	02-83	0	MBY 94,771	146,838

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2	R01 GM21971-08 22300	KREIBICH, GERT ORGANIZATION AND BIOSYNTHESIS OF ER MEMBRANE PROTEINS	NEW YORK UNIVERSITY	NEW YORK NEW YORK	82	01-83	4	MBY 113,935	164,447
5	R01 GM21978-06 21200	ZYSKIND, JUDITH W DNA INITIATION AND TERMINATION IN BACTERIA	UNIVERSITY OF CALIFORNIA SAN DIEGO	LA JOLLA CALIFORNIA	81	09-82	0	MBY 53,012	69,446
2	R01 GM22214-07 22250	OLMSTED, JOANNA B CELLULAR CONTROL OF NEURONAL CYTOSKELETON ASSEMBLY	UNIVERSITY OF ROCHESTER	ROCHESTER NEW YORK	82	02-83	4	MBY 83,117	133,154
2	R01 GM22332-06A1 CA 21200	SCHILDKRAUT, CARL L DNA OF NORMAL AND MALIGNANT CELLS	YESHIVA UNIVERSITY	NEW YORK NEW YORK	82	11-82	4	MBY 86,832	160,132
5	R01 GM22407-06 22250	REBHUN, LIONEL I CONTROL OF SULFHYDRYLS OF TUBULIN AND OTHER PROTEINS	UNIVERSITY OF VIRGINIA CHARLOTTESVILLE	CHARLOTTESVILLE VIRGINIA	81	12-82	0	MBY 51,327	74,424
5	R01 GM22488-06 21320	RUSSELL, PETER J A RIBOSOME BIOSYNTHESIS MUTANT OF NEUROSPORA	REED COLLEGE	PORTLAND OREGON	82	06-83	1	MBY 41,712	57,759
5	R01 GM22525-07 21280	BUTOW, RONALD A REGULATION OF MITOCHONDRIAL BIOGENESIS IN YEAST	UNIVERSITY OF TEXAS HLTH SCI CTR DALLAS	DALLAS TEXAS	82	04-83	1	MBY 55,166	74,750
2	R01 GM22597-07 21280	VAN TUYLE, GLENN C PACKAGING AND REPLICATION OF MITOCHONDRIAL DNA	VIRGINIA COMMONWEALTH UNIVERSITY	RICHMOND VIRGINIA	82	03-83	2	MBY 63,363	89,837
5	R01 GM22874-08 21280	SAGER, RUTH CYTOPLASMIC GENETIC CONTROL SYSTEMS	SIDNEY FARBER CANCER INSTITUTE	BOSTON MASSACHUSETTS	82	06-83	3	MBY 107,193	182,134
5	R01 GM22897-06 21750	LINDELL, THOMAS J CHARACTERIZATION OF NUCLEAR ENZYMOLOGY IN SITU	UNIVERSITY OF ARIZONA	TUCSON ARIZONA	82	03-83	0	MBY 37,922	54,228
5	R01 GM22900-07 22300	CHEN, HARRY W CHOLESTEROL IN MEMBRANE FUNCTION AND CELL TRANSFORMATION	JACKSON LABORATORY	BAR HARBOR MAINE	82	03-83	1	MBY 81,135	130,968
2	R01 GM22916-07 21600	VAN HOLDE, KENSAL E SUBUNIT STRUCTURE OF CHROMATIN	OREGON STATE UNIVERSITY	CORVALLIS OREGON	82	03-83	2	MBY 78,540	99,104

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5	R01 GM22942-07 22300	PAGANO, RICHARD E CELL SURFACE LIPIDS: ORGANIZATION; DYNAMICS; METABOLISM	CARNEGIE INSTITUTION OF WASHINGTON D C	BALTIMORE MARYLAND	82	02-83	1	MBY 62,966	105,471
2	R01 GM23322-04 21320	O'BRIEN, THOMAS W IMMUNOCHEMISTRY OF MAMMALIAN MITOCHONDRIAL RIBOSOMES	UNIVERSITY OF FLORIDA	GAINESVILLE FLORIDA	82	08-83	2	MBY 56,532	80,752
5	R01 GM23410-05 21320	CHOOI, YEAN W RIBOSOMAL TRANSCRIPTION UNITS IN DROSOPHILA MELANOGASTER	INDIANA UNIVERSITY BLOOMINGTON	BLOOMINGTON INDIANA	82	06-83	3	MBY 68,549	97,146
5	R01 GM23443-06 21200	DUMAS, LAWRENCE B EUKARYOTIC CELL PROTEINS THAT INITIATE DNA SYSTHESIS	NORTHWESTERN UNIVERSITY	EVANSTON ILLINOIS	82	12-82	2	MBY 92,500	125,408
5	R01 GM23516-06 22200	WALSH, CHARLES J GENE REGULATION DURING DIFFERENTIATION OF NAEGLERIA	UNIVERSITY OF PITTSBURGH	PITTSBURGH PENNSYLVANIA	82	08-83	0	MBY 54,193	80,657
5	R01 GM23549-06 21320	ROSBASH, MICHAEL M ORGANIZATION OF YEAST RIBOSOMAL PROTEIN GENES	BRANDEIS UNIVERSITY	WALTHAM MASSACHUSETTS	82	01-83	1	MBY 59,099	95,740
5	R01 GM23586-06 22300	JI, TAE H CROSSLINKING OF HORMONES TO RECEPTORS	UNIVERSITY OF WYOMING	LARAMIE WYOMING	82	12-82	1	MBY 45,811	63,677
5	R01 GM23674-06 21600	GRUNSTEIN, MICHAEL HISTONE GENE EXPRESSION IN DEVELOPING SEA URCHIN EMBRYO	UNIVERSITY OF CALIFORNIA	LOS ANGELES LOS ANGELES CALIFORNIA	82	12-82	2	MBY 89,037	115,554
5	R01 GM23705-10 21320	SZER, WLODZIMIERZ REGULATORY MECHANISMS IN PROTEIN BIOSYNTHESIS	NEW YORK UNIVERSITY	NEW YORK NEW YORK	82	05-83	3	MBY 74,724	111,712
2	R01 GM23928-06 22200	ALBERTS, BRUCE M BIOCHEMISTRY OF GENE EXPRESSION IN HIGHER EUKARYOTES	UNIVERSITY OF CALIFORNIA	SAN FRANCISCO SAN FRANCISCO CALIFORNIA	82	07-83	4	MBY 86,466	104,101
5	R01 GM23961-06 21280	LAMBOWITZ, ALAN M BIOGENESIS OF MITOCHONDRIA IN NEUROSPORA	ST. LOUIS UNIVERSITY	SAINT LOUIS MISSOURI	82	06-83	2	MBY 55,908	83,362
2	R01 GM24019-06 21700	COHEN, LEONARD H THE ROLES OF HISTONE SUBTYPES IN DEVELOPMENT	INSTITUTE FOR CANCER RESEARCH	PHILADELPHIA PENNSYLVANIA	82	03-83	2	MBY 95,330	134,927

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2	R01 GM24034-06 21320	LAKE, JAMES A SPATIAL ARRANGEMENT OF FUNCTIONAL SITES IN RIBOSOMES	UNIVERSITY OF CALIFORNIA	LOS ANGELES LOS ANGELES	82 CALIFORNIA	11-82	4	MBY 89,895	112,923
2	R01 GM24109-06 21320	CRAVEN, GARY R THE ASSEMBLY MECHANISM OF THE BACTERIAL RIBOSOME	UNIVERSITY OF WISCONSIN	MADISON MADISON	82 WISCONSIN	07-83	4	MBY 130,037	182,513
5	R01 GM24225-06 21700	KAFATOS, FOTIS C REGULATION AND EVOLUTION OF MULTIGENE FAMILIES	HARVARD UNIVERSITY	CAMBRIDGE	82 MASSACHUSETTS	06-83	2	MBY 54,631	84,132
5	R01 GM24279-06 21750	FIRTEL, RICHARD A GENE STRUCTURE AND TRANSCRIPTIONAL REGULATION	UNIVERSITY OF CALIFORNIA	SAN DIEGO LA JOLLA	82 CALIFORNIA	08-83	2	MBY 146,298	192,393
5	R01 GM24442-05 21750	BANCROFT, F CARTER REGULATION OF GROWTH HORMONE MESSENGER RNA	SLOAN-KETTERING INSTITUTE FOR CANCER RES	NEW YORK	82 NEW YORK	12-82	3	MBY 99,363	144,757
5	R01 GM25062-05 22250	BORISY, GARY G MECHANISM AND CONTROL OF MICROTUBULE ASSEMBLY	UNIVERSITY OF WISCONSIN	MADISON MADISON	82 WISCONSIN	03-83	0	MBY 85,860	119,820
5	R01 GM25114-05 22300	CHUA, NAM-HAI TRANSFER OF PROTEINS INTO ORGANELLES	ROCKEFELLER UNIVERSITY	NEW YORK	82 NEW YORK	03-83	0	MBY 104,801	160,108
2	R01 GM25119-06 21320	JEFFERY, WILLIAM R STRUCTURE AND FUNCTION OF MESSENGER RIBONUCLEOPROTEIN	UNIVERSITY OF TEXAS AUSTIN	AUSTIN	82 TEXAS	07-83	4	MBY 79,481	106,249
5	R01 GM25144-05 22300	HONG, FELIX T PHOTOBIOLOGICAL SYSTEMS AND MEMBRANE INTERFACES	WAYNE STATE UNIVERSITY	DETROIT	82 MICHIGAN	11-82	0	MBY 49,293	64,084
2	R01 GM25157-04 21750	VALENZUELA, PABLO D ROLE OF RNA POLYMERASE SUBUNITS IN GENE TRANSCRIPTION	UNIVERSITY OF CALIFORNIA	SAN FRANCISCO SAN FRANCISCO	82 CALIFORNIA	11-82	4	MBY 34,776	45,557
5	R01 GM25203-05 21600	HERRICK, GLENN A SOMATIC GENOME ALTERATIONS IN OXYTRICHA FALLAX	UNIVERSITY OF UTAH	SALT LAKE CITY	82 UTAH	03-83	1	MBY 79,453	115,207
5	R01 GM25273-05 21600	CECH, THOMAS R CHROMATIN STRUCTURE OF A TRANSCRIPTION UNIT	UNIVERSITY OF COLORADO AT BOULDER	BOULDER	82 COLORADO	03-83	1	MBY 63,567	88,281

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5	R01 GM25327-05 21700	JACOBS-LORENA, MARCELO BIOCHEMICAL STUDIES OF DROSOPHILA OOGENESIS	CASE WESTERN RESERVE UNIVERSITY	CLEVELAND	OHIO	82	03-83	1	MBY 77,368	116,214
2	R01 GM25510-04 21600	GETZ, MICHAEL J REGULATION OF MRNA ABUNDANCE	MAYO FOUNDATION	ROCHESTER	MINNESOTA	82	03-83	2	MBY 91,300	123,220
2	R01 GM25553-04A1 21700	ANGERER, ROBERT C IN SITU LOCALIZATION OF INFORMATIONAL EMBRYO RNAS	UNIVERSITY OF ROCHESTER	ROCHESTER	NEW YORK	82	02-83	4	MBY 118,372	186,735
5	R01 GM25654-04 22400	OLIVERA, BALDOMERO M PYRIDINE NUCLEOTIDES--TURNOVER AND REGULATION	UNIVERSITY OF UTAH	SALT LAKE CITY	UTAH	82	01-83	1	MBY 33,707	48,650
2	R01 GM25821-04 21750	RINGOLD, GORDON M MOLECULAR BIOLOGY OF STEROID HORMONE ACTION	STANFORD UNIVERSITY	STANFORD	CALIFORNIA	82	11-82	4	MBY 121,223	178,946
2	R01 GM25829-04A1 21750	FINKELSTEIN, DAVID B COORDINATION OF PERIODIC GENE EXPRESSION IN YEAST	UNIVERSITY OF TEXAS HLTH SCI CTR DALLAS	DALLAS	TEXAS	82	08-83	2	MBY 59,850	79,986
2	R01 GM25846-03 21750	LUSTY, CAROL J GENE STRUCTURE OF CARBAMYL PHOSPHATE SYNTHETASE	PUBLIC HLTH RES INST OF THE CITY OF NY	NEW YORK	NEW YORK	82	03-83	2	MBY 84,850	112,641
5	R01 GM25864-03 21600	FOWLER, ELIZABETH F SEGREGATION OF CHROMOSOMAL PROTEINS	UNIVERSITY OF NORTH CAROLINA CHAPEL HILL	CHAPEL HILL	NORTH CAROLINA	81	11-82	0	MBY 59,134	84,273
5	R01 GM25901-03 22450	COTTRELL, STEPHEN F MITOCHONDRIAL ASSEMBLY DURING THE YEAST CELL CYCLE	BROOKLYN COLLEGE	NEW YORK	NEW YORK	81	08-83	0	MBY 28,524	45,610
5	R01 GM26137-03 21750	GURNEY, THEODORE, JR DRY FRACTIONATION OF MAMMALIAN CELLS	UNIVERSITY OF UTAH	SALT LAKE CITY	UTAH	81	11-82	0	MBY 43,832	64,433
5	R01 GM26155-05 22250	MURPHY, DOUGLAS B THE MOLECULAR MECHANISM OF INTRACELLULAR MOTILITY	JOHNS HOPKINS UNIVERSITY	BALTIMORE	MARYLAND	82	07-83	2	MBY 61,429	92,144
5	R01 GM26176-04 21600	WEINTRAUB, HAROLD M THE COMPLEXITY OF CHROMOSOME STRUCTURE AND ASSEMBLY	FRED HUTCHINSON CANCER RESEARCH CENTER	SEATTLE	WASHINGTON	82	04-83	1	MBY 52,368	57,092

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2	R01 GM26338-05 22250	POLLARD, THOMAS D MOLECULAR MECHANISM OF CELLULAR MOTILITY	JOHNS HOPKINS UNIVERSITY	BALTIMORE MARYLAND	82	08-83	4	MBY 110,405	150,618
5	R01 GM26349-03 22300	KLEIN, CLAUDETTE PROCESSING OF THE CHEMOTACTIC SIGNAL IN D DISCOIDEUM	ST. LOUIS UNIVERSITY	SAINT LOUIS MISSOURI	81	12-82	0	MBY 42,952	62,710
5	R01 GM26362-03 21600	CASE, STEVEN T THE ORGANIZATION AND EXPRESSION OF CHROMOMERES	UNIVERSITY OF MISSISSIPPI MEDICAL CENTER	JACKSON MISSISSIPPI	81	12-82	0	MBY 49,755	66,213
5	R01 GM26440-03 21600	ADOLPH, KENNETH W NONHISTONE PROTEINS AND HELA CHROMOSOME STRUCTURE	UNIVERSITY OF MINNESOTA OF MNPLS-ST PAUL	MINNEAPOLIS MINNESOTA	81	01-83	0	MBY 41,399	55,907
2	R01 GM26444-04 21750	EVANS, RONALD M HORMONAL REGULATION OF GENE EXPRESSION IN MAMMALIAN CELL	SALK INSTITUTE FOR BIOLOGICAL STUDIES	LA JOLLA CALIFORNIA	82	03-83	2	MBY 89,732	145,366
5	R01 GM26624-04 21750	REEDER, RONALD H CONTROL OF RIBOSOMAL GENE TRANSCRIPTION	FRED HUTCHINSON CANCER RESEARCH CENTER	SEATTLE WASHINGTON	82	07-83	1	MBY 96,516	106,158
2	R01 GM26734-04 22200	PAINE, PHILIP L MECHANISMS OF NUCLEOCYTOPLASMIC PROTEIN DISTRIBUTION	MICHIGAN CANCER FOUNDATION	DETROIT MICHIGAN	82	06-83	3	MBY 64,672	108,683
2	R01 GM26738-04 22400	TRAUGH, JOLINDA A CYCLIC NUCLEOTIDE-INDEPENDENT PHOSPHORYLATION	UNIVERSITY OF CALIFORNIA RIVERSIDE	RIVERSIDE CALIFORNIA	82	06-83	2	MBY 57,901	77,190
2	R01 GM26765-04 21750	NEVINS, JOSEPH R CELLULAR & ADENOVIVRUS GENE EXPRESSION	ROCKEFELLER UNIVERSITY	NEW YORK NEW YORK	82	06-83	2	MBY 71,343	110,869
5	R01 GM26875-04 22250	KIRSCHNER, MARC W BIOCHEMICAL STUDIES OF MITOSIS	UNIVERSITY OF CALIFORNIA SAN FRANCISCO	SAN FRANCISCO CALIFORNIA	82	11-82	3	MBY 155,975	203,087
5	R01 GM26901-04 21600	BRADBURY, EDWIN M CHROMATIN, HISTONE MODIFICATIONS AND HMG PROTEINS	UNIVERSITY OF CALIFORNIA DAVIS	DAVIS CALIFORNIA	82	07-83	0	MBY 142,120	193,684
5	R01 GM26973-04 22250	GOROVSKY, MARTIN A CONTROL OF GENE ACTIVITY AND ORGANELLE BIOGENESIS	UNIVERSITY OF ROCHESTER	ROCHESTER NEW YORK	82	06-83	0	MBY 80,001	137,722

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	5 R01 GM27049-03 22300	FISHER, KNUTE A SPLIT MEMBRANE LIPIDS AND POLYPEPTIDES	UNIVERSITY OF CALIFORNIA	SAN FRANCISCO SAN FRANCISCO CALIFORNIA	82	01-83	0	MBY 61,490	79,477
	2 R01 GM27053-04A1 HL 21600	SUNG, MICHAEL T CHROMATIN STRUCTURE - MAPPING HISTONE/DNA DOMAINS	SOUTHERN ILLINOIS UNIVERSITY CARBONDALE	CARBONDALE ILLINOIS	82	03-83	2	MBY 64,400	86,101
	5 R01 GM27117-03 21750	LUTTER, LEONARD C THE STRUCTURE OF TRANSCRIBING CHROMATIN	UNIVERSITY OF MICHIGAN AT ANN ARBOR	ANN ARBOR MICHIGAN	82	12-82	0	MBY 38,584	60,963
	5 R01 GM27139-03 21320	MARTIN, TERENCE E MESSENGER RNA: PROTEIN COMPLEXES AND PROTEIN SYNTHESIS	UNIVERSITY OF CHICAGO	CHICAGO ILLINOIS	82	06-83	0	MBY 47,777	79,018
	5 R01 GM27155-03 22300	BLOBEL, GUNTER K TRANSLOCATION OF PROTEINS ACROSS MEMBRANES	ROCKEFELLER UNIVERSITY	NEW YORK NEW YORK	82	11-82	2	MBY 186,354	286,612
	5 R01 GM27160-03 22300	ELSON, ELLIOT L BIOPHYSICAL STUDIES OF CELL DEFORMABILITY	WASHINGTON UNIVERSITY	SAINT LOUIS MISSOURI	82	11-82	1	MBY 75,960	117,174
	5 R01 GM27230-03 21320	WINICOV, ILGA B RNA PHOSPHORYLATION ROLE IN EUCARYOTIC RNA PROCESSING	UNIVERSITY OF NEVADA RENO	RENO NEVADA	82	06-83	0	MBY 32,844	45,982
	5 R01 GM27235-03 21320	CASKEY, CHARLES T MAMMALIAN CELL PROTEIN SYNTHESIS MUTANTS	BAYLOR COLLEGE OF MEDICINE	HOUSTON TEXAS	82	12-82	0	MBY 60,038	81,652
	5 R01 GM27291-03 21100	DOWNING, KENNETH H DNA STRUCTURE BY ELECTRON DIFFRACTION AND MICROSCOPY	UNIVERSITY OF CALIFORNIA BERKELEY	BERKELEY CALIFORNIA	82	03-83	0	MBY 33,603	48,052
	5 R01 GM27303-03 22300	PALADE, GEORGE E MEMBRANE INTERACTIONS IN EUKARYOTIC CELLS	YALE UNIVERSITY	NEW HAVEN CONNECTICUT	82	11-82	2	MBY 76,314	119,126
	5 R01 GM27304-03 21600	CHINAULT, ALAN C MOLECULAR ORGANIZATION OF YEAST CENTROMERIC REGIONS	BAYLOR COLLEGE OF MEDICINE	HOUSTON TEXAS	82	05-83	0	MBY 57,027	77,557
	5 R01 GM27310-03 21700	DOTTIN, ROBERT P DEVELOPMENTAL CONTROL OF DICTYOSTELIUM GENE EXPRESSION	JOHNS HOPKINS UNIVERSITY	BALTIMORE MARYLAND	82	11-82	0	MBY 65,349	95,234

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5	R01 GM27318-03 21750	HIRSH, JAY REGULATION OF THE DOPA DECARBOXYLASE GENE	HARVARD UNIVERSITY	BOSTON MASSACHUSETTS	82	12-82	0	MBY 46,624	89,374
5	R01 GM27322-04 21750	WEINBERG, ERIC S HISTONE GENES AND THEIR TRANSCRIPTION	UNIVERSITY OF PENNSYLVANIA	PHILADELPHIA PENNSYLVANIA	82	06-83	3	MBY 96,268	156,567
5	R01 GM27592-03 22300	KELLY, DOUGLAS E FREEZE-FRACTURE OF DESMOSOMAL AND TRIADIC JUNCTIONS	UNIVERSITY OF SOUTHERN CALIFORNIA	LOS ANGELES CALIFORNIA	82	08-83	0	MBY 48,901	74,819
5	R01 GM27718-03 11760	KEMPER, BYRON W STRUCTURE AND FUNCTION OF CYTOCHROME P-450 GENES	UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN	URBANA ILLINOIS	82	04-83	0	MBY 37,342	55,876
5	R01 GM27719-03 21600	STEIN, ARNOLD CHROMATIN ASSEMBLY AND DISASSEMBLY BY PROTEINS	PURDUE UNIVERSITY WEST LAFAYETTE	WEST LAFAYETTE INDIANA	82	04-83	0	MBY 67,136	92,190
5	R01 GM27720-03 21310	SOLLNER-WEBB, BARBARA T TRANSCRIPTION OF XENOPUS RIBOSOMAL DNA	JOHNS HOPKINS UNIVERSITY	BALTIMORE MARYLAND	82	03-83	0	MBY 42,368	63,552
5	R01 GM27757-03 21320	JACOBSON, ALLAN S MESSENGER RNA METABOLISM IN DICTYOSTELIUM DISCOIDEUM	UNIVERSITY OF MASSACHUSETTS MEDICAL SCH	WORCESTER MASSACHUSETTS	82	03-83	2	MBY 74,304	125,267
5	R01 GM27758-03 12930	BEER, MICHAEL ELECTRON MICROSCOPIC STUDIES OF COLLAGEN	JOHNS HOPKINS UNIVERSITY	BALTIMORE MARYLAND	82	03-83	0	MBY 43,941	65,912
5	R01 GM27764-03 22300	UNWIN, PETER N STRUCTURE OF MOLECULAR ASSEMBLIES INVOLVING MEMBRANES	STANFORD UNIVERSITY	STANFORD CALIFORNIA	82	03-83	2	MBY 85,683	134,219
5	R01 GM27765-03 21310	AEBI, UELI STRUCTURAL STUDIES OF RNA POLYMERASE FROM E. COLI	JOHNS HOPKINS UNIVERSITY	BALTIMORE MARYLAND	82	03-83	0	MBY 56,475	82,513
5	R01 GM27789-03 21750	MARZLUFF, WILLIAM F, JR TRANSCRIPTION OF LMW NUCLEAR RNA GENES IN DEVELOPMENT	FLORIDA STATE UNIVERSITY	TALLAHASSEE FLORIDA	82	06-83	0	MBY 64,320	92,497
5	R01 GM27790-03 21750	MATHEWS, MICHAEL B INDUCTION AND REPRESSION BY AMINO ACID ANALOGUES	COLD SPRING HARBOR LABORATORY	COLD SPRING HARB NEW YORK	82	03-83	0	MBY 51,133	91,068

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5	R01 GM27795-03 21280	LOCKER, JOSEPH ANALYSIS OF MTRNA AND ITS PROCESSING IN YEAST	UNIVERSITY OF CHICAGO	CHICAGO ILLINOIS	82	04-83	0	MBY	53,610	82,805
5	R01 GM27839-03 21250	CHAE, CHI-BOM GLOBIN GENE BINDING NONHISTONE PROTEINS	UNIVERSITY OF NORTH CAROLINA CHAPEL HILL	CHAPEL HILL NORTH CAROLINA	82	03-83	0	MBY	47,122	65,386
5	R01 GM27925-04 21750	HOPPER, JAMES E MOLECULAR BASIS OF INTERCHROMOSOMAL GENE REGULATION	PENNSYLVANIA STATE UNIV HERSHEY MED CTR	HERSHEY PENNSYLVANIA	82	08-83	1	MBY	90,475	119,639
5	R01 GM27935-03 21320	GIACOMONI, DARIO CELLULAR DISCRIMINATION OF LIPOSOME-INSERTED MRNAS	UNIVERSITY OF ILLINOIS MEDICAL CENTER	CHICAGO ILLINOIS	82	11-83	0	MBY	54,602	85,725
5	R01 GM28003-03 21320	NOMURA, MASAYASU RIBOSOME STRUCTURE AND FUNCTION	UNIVERSITY OF WISCONSIN MADISON	MADISON WISCONSIN	82	01-83	0	MBY	59,098	84,080
5	R01 GM28039-03 21750	CECH, THOMAS R ENZYMATIC SPLICING OF A RIBOSOMAL RNA PRECURSOR	UNIVERSITY OF COLORADO AT BOULDER	BOULDER COLORADO	82	07-83	0	MBY	48,572	67,952
5	R01 GM28098-03 21200	HUBERMAN, JOEL A SOLUBLE PROTEINS OF MAMMALIAN DNA REPLICATION	ROSWELL PARK MEMORIAL INSTITUTE	BUFFALO NEW YORK	82	06-83	0	MBY	89,417	128,681
5	R01 GM28099-03 21200	JAZWINSKI, S MICHAL BIOCHEMICAL ANALYSIS OF CELL CYCLE CONTROLS	ROCKEFELLER UNIVERSITY	NEW YORK NEW YORK	82	07-83	0	MBY	66,949	104,540
5	R01 GM28100-03 21320	DUBIN, DONALD T TRANSFER RNA SEQUENCES FROM ANIMAL MITOCHONDRIA	RUTGERS MEDICAL SCHOOL	PISCATAWAY NEW JERSEY	82	08-83	0	MBY	42,968	70,326
5	R01 GM28194-03 22300	GREEN, MICHAEL NASCENT PROTEIN PROCESSING BY ENDOPLASMIC RETICULUM	ST. LOUIS UNIVERSITY	SAINT LOUIS MISSOURI	82	08-83	0	MBY	66,602	98,883
5	R01 GM28298-03 21750	STALLCUP, MICHAEL R STEROID HORMONE ACTION: MOLECULAR AND GENETIC STUDIES	UNIVERSITY OF SOUTH CAROLINA AT COLUMBIA	COLUMBIA SOUTH CAROLINA	82	06-83	0	MBY	51,535	74,777
5	R01 GM28303-03 21750	SCHLESINGER, MILTON J FUNCTION AND REGULATION OF "HEAT-SHOCK" PROTEINS	WASHINGTON UNIVERSITY	SAINT LOUIS MISSOURI	82	06-83	0	MBY	62,605	97,038

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5	R01 GM28331-03 21750	GROSS, SAMSON R REGULATORY MECHANISMS OF ENZYME SYNTHESIS IN NEUROSPORA	DUKE UNIVERSITY	DURHAM NORTH CAROLINA	82	07-83	2	MBY 87,062	129,081
5	R01 GM28334-03 21320	DURE, LEON S, III TRANSCRIPTION AND TRANSLATION IN A DEVELOPMENTAL SYSTEM	UNIVERSITY OF GEORGIA	ATHENS GEORGIA	82	06-83	3	MBY 62,975	85,386
5	R01 GM28359-03 22300	VILLEREAL, MITCHEL L MECHANISMS OF MEMBRANE FUNCTION IN CELL GROWTH	UNIVERSITY OF CHICAGO	CHICAGO ILLINOIS	82	03-83	0	MBY 58,025	91,099
5	R01 GM28482-02 21200	GILL, D MICHAEL FUNCTION OF POLY (ADP-RIBOSE)	TUFTS UNIVERSITY	BOSTON MASSACHUSETTS	82	12-82	3	MBY 54,933	85,021
5	R01 GM28520-02 21750	RUTTER, WILLIAM J SPECIFIC GENE EXPRESSION IN EUCARYOTIC ORGANISMS	UNIVERSITY OF CALIFORNIA	SAN FRANCISCO SAN FRANCISCO CALIFORNIA	82	11-82	3	MBY 128,221	166,650
5	R01 GM28553-02 22250	ERICKSON, HAROLD P IMMUNO-ELECTRON MICROSCOPY OF CYTOSKELETAL FILAMENTS	DUKE UNIVERSITY	DURHAM NORTH CAROLINA	82	04-83	1	MBY 48,004	69,806
5	R01 GM28557-02 21700	DE RIEL, JON K MOLECULAR BIOLOGY OF ERYTHROID DIFFERENTIATION	TEMPLE UNIVERSITY	PHILADELPHIA PENNSYLVANIA	82	12-82	1	MBY 61,073	87,691
5	R01 GM28697-02 21320	GREENBERG, JAY R MRNA-PROTEIN INTERACTIONS IN POLYRIBOSOMES	WORCESTER FDN FOR EXPER BIOLOGY	SHREWSBURY MASSACHUSETTS	82	02-83	1	MBY 49,653	82,961
5	R01 GM28699-03 21600	FARRON-FURSTENTHAL, F REGULATION OF NUCLEAR PROTEIN KINASES	UNIVERSITY OF CALIFORNIA SAN DIEGO	LA JOLLA CALIFORNIA	82	04-83	0	MBY 52,220	68,408
5	R01 GM28780-02 21600	REEDER, RONALD H ANTIBODIES AGAINST NUCLEOLAR PROTEINS	FRED HUTCHINSON CANCER RESEARCH CENTER	SEATTLE WASHINGTON	82	03-83	1	MBY 99,850	110,217
5	R01 GM28820-02 21320	KORNBERG, ROGER D STRUCTURE AND PROCESSING OF NUCLEAR RIBONUCLEOPROTEINS	STANFORD UNIVERSITY	STANFORD CALIFORNIA	82	02-83	1	MBY 81,677	127,942
5	R01 GM28887-03 22300	HENDERSON, ELLEN J PROTEIN TOPOGRAPHY OF D. DISCOIDEUM PLASMA MEMBRANES	GEORGETOWN UNIVERSITY	WASHINGTON DIST OF COL	82	07-83	0	MBY 39,124	54,683

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5	R01 GM28975-02 21600	HJELM, REX P, JR ELECTRON MICROSCOPY OF CHROMATIN STRUCTURE	UNIVERSITY OF ILLINOIS MEDICAL CENTER	CHICAGO ILLINOIS	82	03-83	0	MBY		24,700	38,779
5	R01 GM28983-02 21750	MANLEY, JAMES L CONTROL OF MRNA SYNTHESIS IN MAMMALIAN CELLS	COLUMBIA UNIVERSITY	NEW YORK NEW YORK	82	03-83	1	MBY		58,317	97,198
5	R01 GM28985-02 21320	LOCKARD, RAYMOND E TOPOGRAPHY OF 18S RIBOSOMAL RNA IN THE 40S SUBUNIT	GEORGE WASHINGTON UNIVERSITY	WASHINGTON DIST OF COL	82	03-83	1	MBY		49,767	78,599
5	R01 GM28986-02 21600	LIZARDI, PAUL M CHARACTERIZATION OF THE SMALL NUCLEAR RNA'S OF B MORI	ROCKEFELLER UNIVERSITY	NEW YORK NEW YORK	82	03-83	1	MBY		59,195	89,969
5	R01 GM29091-02 21200	TSENG, BEN Y RNA PRIMING OF EUKARYOTE DNA SYNTHESIS	UNIVERSITY OF CALIFORNIA SAN DIEGO	LA JOLLA CALIFORNIA	82	05-83	1	MBY		64,088	83,955
5	R01 GM29156-02 22200	DIMOND, RANDALL L SYNTHESIS AND LOCALIZATION OF LYSOSOMAL ENZYMES	UNIVERSITY OF WISCONSIN MADISON	MADISON WISCONSIN	82	03-83	1	MBY		62,530	89,034
5	R01 GM29228-02 22250	MORRIS, N RONALD THE GENETICS OF MICROTUBULE ASSEMBLY AND FUNCTION	RUTGERS THE STATE UNIV NEW BRUNSWICK	NEW BRUNSWICK NEW JERSEY	82	05-83	3	MBY		95,064	157,331
5	R01 GM29302-02 21320	CHIKARAISHI, DONA M POST-TRANSCRIPTIONAL CONTROL OF GENE EXPRESSION	NATIONAL JEWISH HOSPITAL & RESEARCH CTR	DENVER COLORADO	82	11-82	0	MBY		61,031	83,977
5	R01 GM29356-02 21750	JOHNSON, LEE F THYMIDYLATE SYNTHETASE GENE EXPRESSION	OHIO STATE UNIVERSITY	COLUMBUS OHIO	82	08-83	1	MBY		36,318	49,016
5	R01 GM29387-02 21280	LEWIN, ALFRED S REGULATION OF MITOCHONDRIAL ASSEMBLY	INDIANA UNIVERSITY BLOOMINGTON	BLOOMINGTON INDIANA	82	06-83	1	MBY		69,263	98,136
5	R01 GM29487-02 21310	LUSE, DONAL S CONTROL OF TRANSCRIPTION IN EUKARYOTIC CELLS	UNIVERSITY OF CINCINNATI	CINCINNATI OHIO	82	06-83	1	MBY		72,004	100,206
5	R01 GM29495-02 21320	GALAU, GLENN A REGULATION OF SYNTHESIS OF A HORMONE INDUCED PROTEIN SET	UNIVERSITY OF GEORGIA	ATHENS GEORGIA	82	06-83	1	MBY		33,713	46,144

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5	R01 GM29513-02 22250	CLEVELAND, DON W MICROTUBULE REGULATION: CONTROL OF EXPRESSION OF TUBULI	JOHNS HOPKINS UNIVERSITY	BALTIMORE MARYLAND	82	06-83	1	MBY		65,083	96,125
5	R01 GM29532-02 21320	LIARAKOS, CHARLES D STRUCTURE OF ESTROGEN INDUCED HEN OVIDUCT MESSENGER RNAS	MAYO FOUNDATION	ROCHESTER MINNESOTA	82	08-83	1	MBY		59,176	75,617
5	R01 GM29630-02 22250	FARMER, STEPHEN R CELL CONFIGURATION & SYNTHESIS OF TUBULIN & ACTIN	BOSTON UNIVERSITY	BOSTON MASSACHUSETTS	82	06-83	1	MBY		51,251	92,047
7	R01 GM29733-01 21700	SCHMIDT, ROBERT R GENE-ENZYME CONTROL IN EUCARYOTIC CELL CYCLE	UNIVERSITY OF FLORIDA	GAINESVILLE FLORIDA	81	12-82	0	MBY		54,471	78,229
5	R01 GM29792-05 22200	HILLE, MERRILL B ACTIVATION OF PROTEIN SYNTHESIS IN EGG AND EMBRYOS	UNIVERSITY OF WASHINGTON	SEATTLE WASHINGTON	82	01-83	1	MBY		49,759	65,949
1	R01 GM29986-01 21320	CHIKARAISHI, DONA M REGULATION OF MAMMALIAN RIBOSOMAL 45S RNA SYNTHESIS	NATIONAL JEWISH HOSPITAL & RESEARCH CTR	DENVER COLORADO	82	08-83	2	MBY		47,975	65,390
1	R01 GM30204-01 21320	KELLEMS, RODNEY E REGULATION OF MRNA METABOLISM IN ANIMAL CELLS	BAYLOR COLLEGE OF MEDICINE	HOUSTON TEXAS	82	02-83	2	MBY		92,796	114,429
1	R01 GM30249-01 21750	DUFFY, JOHN J REGULATION OF RNA POLYMERASE II SYNTHESIS	UNIVERSITY OF ARIZONA	TUCSON ARIZONA	82	01-83	2	MBY		63,410	87,705
1	R01 GM30299-01 22300	ELSON, ELLIOT L BIOPHYSICAL STUDIES OF CELL SURFACE INTERACTIONS	WASHINGTON UNIVERSITY	SAINT LOUIS MISSOURI	82	01-83	2	MBY		71,895	106,254
7	R01 GM30324-01 22300	JOHNSON, GARY L REGULATORY PROTEINS OF ADENYLATE CYCLASE	UNIVERSITY OF MASSACHUSETTS MEDICAL SCH	WORCESTER MASSACHUSETTS	81	11-82	0	MBY		50,997	73,995
2	R01 GM30355-02 11770	ROSS, ELLIOTT M EFFECT OF MEMBRANE STRUCTURE ON ADENYLATE CYCLASE	UNIVERSITY OF TEXAS HLTH SCI CTR DALLAS	DALLAS TEXAS	82	07-83	4	MBY		95,945	118,728
5	R01 GM30365-08 22410	HIRSCHBERG, CARLOS B GLYCOSYLATION MECHANISMS OF CELL LIPIDS AND PROTEINS	ST. LOUIS UNIVERSITY	SAINT LOUIS MISSOURI	82	07-83	3	MBY		77,391	113,087

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1	R01 GM30385-01 22250	BORISY, GARY G MOLECULAR ANALYSIS OF MITOTIC SPINDLE COMPONENTS	UNIVERSITY OF WISCONSIN MADISON	MADISON WISCONSIN	82	01-83	4	67,134	MBY 87,854
1	R01 GM30443-01 21320	PELLEGRINI, MARIA C STRUCTURE-FUNCTION RELATIONSHIPS IN RIBOSOMES	UNIVERSITY OF SOUTHERN CALIFORNIA	LOS ANGELES CALIFORNIA	82	04-83	2	61,180	MBY 82,193
1	R13 GM30536-01 GM 21750	WATSON, JAMES D CONFERENCE ON HEAT SHOCK INDUCTION OF PROTEINS	COLD SPRING HARBOR LABORATORY	COLD SPRING HARB NEW YORK	82	03-83	0	5,000	MBY 5,000
5	R01 GM30547-02 21750	CALVET, JAMES P PATTERNS OF GENE TRANSCRIPTION IN HE LA CELLS	UNIVERSITY OF KANSAS COL HLTH SCI & HOSP	KANSAS CITY KANSAS	82	07-83	0	52,413	MBY 69,585
1	R01 GM30600-01 21600	MUSICH, PHILLIP R SPECIFIC DNA-PROTEIN COMPLEXES IN GENOME ORGANIZATION	EAST TENNESSEE STATE UNIVERSITY	JOHNSON CITY TENNESSEE	82	04-83	2	63,346	MBY 84,406
7	R01 GM30602-01 21200	SCOTT, JOHN F THE ENZYMOLOGY OF DNA REPLICATION IN YEAST	UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN	URBANA ILLINOIS	81	07-83	0	61,108	MBY 87,561
7	R01 GM30626-01 22250	WITMAN, GEORGE B, III MOLECULAR MECHANISM OF FLAGELLA MOTILITY AND ASSEMBLY	WORCESTER FDN FOR EXPER BIOLOGY	SHREWSBURY MASSACHUSETTS	81	11-82	0	60,065	MBY 94,121
1	R01 GM30637-01 21750	KORNBERG, THOMAS B MOLECULAR MECHANISMS IN DEVELOPMENT	UNIVERSITY OF CALIFORNIA SAN FRANCISCO	SAN FRANCISCO CALIFORNIA	82	02-83	2	85,909	MBY 112,386
2	R01 GM30731-02 AI 21780	ROWND, ROBERT H THE CONTROL OF THE REPLICATION OF BACTERIAL EPISOMES	NORTHWESTERN UNIVERSITY	CHICAGO ILLINOIS	82	08-83	4	153,000	MBY 225,480
1	R01 GM30758-01 CA 22200	SLUDER, GREENFIELD RNA IN FORMATION, FUNCTION & REPRODUCTION OF CENTROSOME	WORCESTER FDN FOR EXPER BIOLOGY	SHREWSBURY MASSACHUSETTS	82	04-83	2	66,575	MBY 99,831
1	R01 GM30891-01 11760	COCHRANE, BRUCE J INDUCTION OF CYTOCHROME P-450'S IN DROSOPHILA	UNIVERSITY OF SOUTH FLORIDA	TAMPA FLORIDA	82	07-83	2	37,434	MBY 51,735
1	R01 GM30892-01 21200	JONES, PETER A DNA METHYLATION AND DEMETHYLATION IN CYCLING CELLS	CHILDREN'S HOSPITAL OF LOS ANGELES	LOS ANGELES CALIFORNIA	82	06-83	2	67,430	MBY 96,441

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1	R01 GM31073-01 21310	WEINER, ALAN M TRANSCRIPTION AND FUNCTION OF HUMAN SMALL NUCLEAR RNAS	YALE UNIVERSITY	NEW HAVEN CONNECTICUT	82	06-83	2	MBY		56,987	94,888
1	R01 GM31137-01 21750	CASHMORE, ANTHONY R SEQUENCES ENCODING THE SMALL SUBUNIT OF RUBP CARBOXYLASE	ROCKEFELLER UNIVERSITY	NEW YORK NEW YORK	82	07-83	2	MBY		62,529	94,451
1 3	R01 GM31138-01 21750	LEE, AMY SHIU HISTONE GENE EXPRESSION IN THE MAMMALIAN CELL CYCLE	UNIVERSITY OF SOUTHERN CALIFORNIA	LOS ANGELES CALIFORNIA	82	08-83	2	MBY		65,837	93,576
1	R01 GM31159-01 21750	SILFLOW, CAROLYN D CHARACTERIZATION AND EXPRESSION OF TUBULIN GENES	UNIVERSITY OF MINNESOTA OF MNPLS-ST PAUL	MINNEAPOLIS MINNESOTA	82	06-83	2	MBY		61,756	79,601
1	R01 GM31181-01 21700	DIMOND, RANDALL L 2-MANNOSIDASE REGULATION DURING SLIME MOLD DEVELOPMENT	UNIVERSITY OF WISCONSIN MADISON	MADISON WISCONSIN	82	06-83	2	MBY		49,474	67,308
1	R01 GM31218-01 21750	SKLAR, JEFFREY L TRANSCRIPTION OF HUMAN GLOBIN GENES IN DNA VECTORS	STANFORD UNIVERSITY	STANFORD CALIFORNIA	82	06-83	2	MBY		63,050	89,582
1	R01 GM31229-01 22250	PENNINGROTH, STEPHEN M ATP-DEPENDENT CONTROL MECHANISMS IN FLAGELLAR MOTILITY	RUTGERS MEDICAL SCHOOL	PISCATAWAY NEW JERSEY	82	06-83	2	MBY		36,819	58,446
1	R01 GM31247-01 21200	BENBOW, ROBERT M DNA RECOMBINASE FROM OVARIES OF THE FROG, XENOPUS LAEVIS	JOHNS HOPKINS UNIVERSITY	BALTIMORE MARYLAND	82	06-83	2	MBY		28,799	43,199
1	R01 GM31281-01 21700	NADAL-GINARD, BERNARDO MYOSIN HEAVY CHAIN EXPRESSION IN A MUSCLE CELL LINE	YESHIVA UNIVERSITY	NEW YORK NEW YORK	82	06-83	4	MBY		103,385	146,818
1	R01 GM31528-01 21320	NILSEN, TIMOTHY W 2',5'-OLIGO(A) AND NUCLEAR RNA METABOLISM	CASE WESTERN RESERVE UNIVERSITY	CLEVELAND OHIO	82	07-83	2	MBY		42,991	62,186
7	R01 GM31696-01 21750	MEARS, JOHN G REGULATION OF HUMAN GLOBIN GENE EXPRESSION	COLUMBIA UNIVERSITY	NEW YORK NEW YORK	82	06-83	0	MBY		74,308	125,404
7	R01 GM31802-01 21750	FINK, GERALD R REGULATION OF HISTIDINE BIOSYNETHESIS IN YEAST	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	CAMBRIDGE MASSACHUSETTS	82	11-82	3	MBY		24,500	37,118

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1	R01 GM31964-01 / 21200	MATSUMOTO, LLOYD H / THE REPLICATION OF BOVINE SATELLITE DNA	RHODE ISLAND COLLEGE	PROVIDENCE / RHODE ISLAND	82	08-83	2	MBY	74,640	93,638
1	R01 GM32113-01 / 21280	DALE, RODERIC / ORGANIZATION & EXPRESSION OF TOBACCO MITOCHONDRIAL GENOM	UNIVERSITY OF MINNESOTA OF MNPLS-ST PAUL	MINNEAPOLIS / MINNESOTA	82	08-83	2	MBY	70,647	98,199
***	0	* CENTERS							0	0
***	186	NONCENTERS							12,964,500	18,949,983
***	186	TOTAL							12,964,500	18,949,983
5	R01 GM05147-26 / 11910	STORK, GILBERT / SYNTHESIS OF BIOLOGICALLY ACTIVE NATURAL PRODUCTS	COLUMBIA UNIVERSITY	NEW YORK / NEW YORK	82	08-83	2	MCHA	129,215	219,278
5	R01 GM05829-24 / 11910	LEONARD, NELSON J / NUCLEOSIDES, NUCLEIC ACIDS, AND CELL DIVISION FACTORS	UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN	URBANA / ILLINOIS	82	11-82	2	MCHA	112,384	158,763
5	R01 GM06168-23 / 11940	SCHUERCH, CONRAD / STEREOSPECIFIC SYNTHESIS OF POLYSACCHARIDES	COLLEGE OF ENVIRONMENTAL SCI & FORESTRY	SYRACUSE / NEW YORK	82	06-83	0	MCHA	47,000	69,649
5	R01 GM06304-19 / 11910	NICKON, ALEX / DOMED FUNCTIONAL GROUPS	JOHNS HOPKINS UNIVERSITY	BALTIMORE / MARYLAND	81	08-83	0	MCHA	68,866	102,524
5	R01 GM07487-22 / 11930	ZIMMERMAN, HOWARD E / PHOTOCHEMISTRY OF ORGANIC MOLECULES	UNIVERSITY OF WISCONSIN MADISON	MADISON / WISCONSIN	82	07-83	1	MCHA	87,446	123,113
5	R01 GM07874-20 / 11940	WASSERMAN, HARRY H / SYNTHESIS OF B-LACTUM ANTIBIOTICS AND MACROCYCLIC LACTA	YALE UNIVERSITY	NEW HAVEN / CONNECTICUT	82	06-83	2	MCHA	53,600	90,048

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2	R01 GM09706-17 11440	CARPINO, LOUIS A NEW AMINO-PROTECTING GROUPS	UNIVERSITY OF MASSACHUSETTS AMHERST	AMHERST MASSACHUSETTS	82	08-83	4	MCHA 92,664	118,098
5	R01 GM10421-18 11910	VAN TAMELEN, EUGENE E BIOORGANIC CHEMISTRY OF STEROIDS AND TERPENOIDS	STANFORD UNIVERSITY	STANFORD CALIFORNIA	82	07-83	0	MCHA 40,148	63,434
5	R01 GM10937-20 11940	BROWN, HERBERT C STEREOSPECIFIC SYNTHESES VIA HYDROBORATION	PURDUE UNIVERSITY WEST LAFAYETTE	WEST LAFAYETTE INDIANA	82	06-83	3	MCHA 83,443	116,820
5	R01 GM11976-17 11910	HORTON, DEREK SYNTHESIS OF BIOLOGICALLY IMPORTANT CARBOHYDRATES	OHIO STATE UNIVERSITY	COLUMBUS OHIO	82	09-83	0	MCHA 80,213	109,522
5	R01 GM12640-18 11920	CRAM, DONALD J HOST MOLECULES THAT COMPLEX AND CATALYZE	UNIVERSITY OF CALIFORNIA LOS ANGELES	LOS ANGELES CALIFORNIA	82	11-82	2	MCHA 85,041	111,404
5	R01 GM12672-12 11910	BURGESS, EDWARD M THE CHEMISTRY OF NEW FUNCTIONAL GROUPS IN ENZYMES	GEORGIA INSTITUTE OF TECHNOLOGY	ATLANTA GEORGIA	82	02-83	0	MCHA 60,100	93,155
5	R01 GM13246-25 11910	LEETE, EDWARD METABOLISM OF NATURAL PRODUCTS OF MEDICINAL INTEREST	UNIVERSITY OF MINNESOTA OF MNPLS-ST PAUL	MINNEAPOLIS MINNESOTA	82	12-82	1	MCHA 68,602	93,299
5	R01 GM13598-17 11940	TROST, BARRY M MACROLIDES, STEROIDS, PROSTANOIDS, ETC--SYNTHETIC DESIGN	UNIVERSITY OF WISCONSIN MADISON	MADISON WISCONSIN	82	05-83	0	MCHA 84,662	118,318
2	R01 GM13854-16 11920	WASSERMAN, HARRY H REACTIONS OF MOLECULAR OXYGEN WITH ORGANIC SUBSTRATES	YALE UNIVERSITY	NEW HAVEN CONNECTICUT	82	06-83	3	MCHA 76,766	127,607
5	R01 GM13956-17 11920	COATES, ROBERT M SPECIFICITY IN TERPENE AND STEROL BIOSYNTHESIS	UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN	URBANA ILLINOIS	82	02-83	0	MCHA 72,275	102,284
5	R01 GM15997-13 11940	HART, HAROLD STUDIES IN ORGANIC SYNTHESES	MICHIGAN STATE UNIVERSITY	EAST LANSING MICHIGAN	82	05-83	1	MCHA 56,324	70,957
5	R01 GM16611-12 11940	GIVENS, RICHARD S EXPLORATORY AND SYNTHETIC PHOTOCHEMISTRY	UNIVERSITY OF KANSAS LAWRENCE	LAWRENCE KANSAS	81	11-82	0	MCHA 41,059	54,008

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5	R01 GM18519-12 11940	COREY, ELIAS J COMPUTER-ASSISTED ANALYSIS OF CHEMICAL SYNTHESIS	HARVARD UNIVERSITY	CAMBRIDGE MASSACHUSETTS	82	06-83	3	MCHA 121,600	187,264
2	R01 GM18752-09A1 11440	GLASS, JOHN D SOLID-PHASE PEPTIDE SYNTHESIS IN ORGANIC SOLVENT MEDIA	MOUNT SINAI SCHOOL OF MEDICINE	NEW YORK NEW YORK	82	08-83	2	MCHA 77,904	115,342
5	R01 GM18754-21 11920	BRESLOW, RONALD C BIOCHEMICAL MODEL REACTIONS	COLUMBIA UNIVERSITY	NEW YORK NEW YORK	82	12-82	3	MCHA 111,610	186,382
5	R01 GM18874-11 11940	BEAK, PETER A NEW SYNTHETIC METHODS USEFUL FOR CHEMOTHERAPEUTICS	UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN	URBANA ILLINOIS	82	07-83	2	MCHA 53,736	76,096
5	R01 GM19566-12 11910	STEVENSON, ROBERT BISARYLPROPANOIDS OF CHEMICAL AND MEDICINAL INTEREST	BRANDEIS UNIVERSITY	WALTHAM MASSACHUSETTS	82	11-82	0	MCHA 49,889	80,820
5	R01 GM20672-22 21100	RAMIREZ, FAUSTO SUPERPHOSPHORYLATING AGENTS	STATE UNIVERSITY NEW YORK STONY BROOK	STONY BROOK NEW YORK	82	06-83	0	MCHA 82,934	124,181
2	R01 GM22346-06 11940	GASSMAN, PAUL G STEREOSPECIFIC FUNCTIONALIZATION OF AROMATIC AMINES	UNIVERSITY OF MINNESOTA OF MNPLS-ST PAUL	MINNEAPOLIS MINNESOTA	82	11-82	1	MCHA 44,945	61,125
5	R01 GM22760-07 11940	COHEN, THEODORE NEW METHODS FOR SYNTHESIS AND MODIFICATION OF RINGS	UNIVERSITY OF PITTSBURGH	PITTSBURGH PENNSYLVANIA	82	08-83	1	MCHA 69,068	104,983
5	R01 GM22995-06 11940	SHEA, KENNETH J TEMPLATE SYNTHESIS OF MACROMOLECULES	UNIVERSITY OF CALIFORNIA IRVINE	IRVINE CALIFORNIA	82	05-83	0	MCHA 39,066	51,176
5	R01 GM23375-06 11920	BERSON, JEROME A SPIN-REACTIVITY LABELS AS DIMENSIONAL PROBES	YALE UNIVERSITY	NEW HAVEN CONNECTICUT	82	04-83	0	MCHA 54,379	85,919
5	R01 GM23593-06 11910	HARRIS, THOMAS M VANCOMYCIN, RISTOCETIN AND RELATED ANTIBIOTICS	VANDERBILT UNIVERSITY	NASHVILLE TENNESSEE	82	06-83	1	MCHA 61,546	99,089
5	R01 GM24392-03 22400	MATTA, KHUSHI L STUDIES RELATED TO ENDOGLYCOSIDASES	ROSWELL PARK MEMORIAL INSTITUTE	BUFFALO NEW YORK	81	08-83	0	MCHA 43,541	63,092

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5	R01 GM24474-05 11940	KRAUS, GEORGE A SILYL ENONES IN ANTHRACYCLINE SYNTHESIS	IOWA STATE UNIVERSITY OF SCIENCE & TECH	AMES IOWA	82	02-83	0	MCHA 42,748	57,282
5	R01 GM25151-05 21100	HEARST, JOHN E NUCLEIC ACID INTERACTIONS WITH SYNTHETIC PSORALENS	UNIVERSITY OF CALIFORNIA BERKELEY	BERKELEY CALIFORNIA	82	03-83	1	MCHA 78,230	102,481
5	R01 GM25242-04 11930	ABRAMOVITCH, RUDOLPH A BIOLOGICALLY ACTIVE COMPOUNDS FROM N-OXIDES AND YLIDES	CLEMSON UNIVERSITY	CLEMSON SOUTH CAROLINA	81	12-82	0	MCHA 66,986	97,919
5	R01 GM25252-04 11930	LAMBETH, DAVID O SYNTHESIS AND PROPERTIES OF S-ALKYLISOTHIAZOLIDINES	UNIVERSITY OF NORTH DAKOTA	GRAND FORKS NORTH DAKOTA	81	12-82	0	MCHA 18,059	24,610
5	R01 GM25280-11 11470	MANNING, MAURICE DESIGN AND SYNTHESIS OF NEUROHYPOPHYSIAL PEPTIDES	MEDICAL COLLEGE OF OHIO AT TOLEDO	TOLEDO OHIO	82	06-83	0	MCHA 77,598	120,364
5	R01 GM25303-05 11910	TUFARIELLO, JOSEPH J ALKALOID SYNTHESIS	STATE UNIVERSITY OF NEW YORK AT BUFFALO	BUFFALO NEW YORK	82	08-83	1	MCHA 76,358	112,377
5	R01 GM25799-03 11910	HUTCHINSON, C RICHARD STEREOCHEMISTRY OF POLYKETIDE ANTIBIOTIC BIOSYNTHESIS	UNIVERSITY OF WISCONSIN MADISON	MADISON WISCONSIN	81	12-82	0	MCHA 19,628	27,269
5	R01 GM25816-03 11910	RAUCHER, STANLEY INDOLE ALKALOID SYNTHESIS VIA CLAISEN REARRANGEMENT	UNIVERSITY OF WASHINGTON	SEATTLE WASHINGTON	82	03-83	0	MCHA 39,809	53,304
5	R01 GM25908-02 11940	MANATT, STANLEY L USE OF NMR IN SOLID-PHASE PEPTIDE SYNTHESES	CALIFORNIA INSTITUTE OF TECHNOLOGY	PASADENA CALIFORNIA	82	02-83	1	MCHA 88,117	88,117
2	R01 GM25950-04 11910	DANHEISER, RICK L SYNTHETIC APPROACHES TO CYCLIC NATURAL PRODUCTS	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	CAMBRIDGE MASSACHUSETTS	82	11-82	2	MCHA 81,825	106,533
5	R01 GM26074-03 11920	SCHWAB, JOHN M STEREOCHEMISTRY AND MECHANISMS OF ENZYME REACTIONS	CATHOLIC UNIVERSITY OF AMERICA	WASHINGTON DIST OF COL	81	11-82	0	MCHA 32,784	50,487
2	R01 GM26111-07 11910	EVANS, DAVID A ANTICANCER AND NEUROTOXIC ALKALOID SYNTHESIS	CALIFORNIA INSTITUTE OF TECHNOLOGY	PASADENA CALIFORNIA	82	03-83	3	MCHA 93,568	138,481

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5	R01 GM26245-03 11940	EPSTEIN, WILLIAM W PHOTOCHEMICAL TECHNIQUES ON BIOLOGICAL PROBLEMS	UNIVERSITY OF UTAH	SALT LAKE CITY UTAH	81	11-82	0	MCHA	46,914	67,755
5	R01 GM26249-04 21100	USHER, DAVID A TEMPLATE REACTIONS AND CHEMICAL EVOLUTION	CORNELL UNIVERSITY ITHACA	ITHACA NEW YORK	82	03-83	0	MCHA	32,104	53,639
5	R01 GM26265-03 11940	HARDING, KENN E SPIROCYCLIC SYSTEM SYNTHESIS--PI CATIONIC CYCLIZATION	TEXAS AGRI AND MECH UNIV	COLLEGE STATION COLLEGE STATION TEXAS	81	09-82	0	MCHA	38,364	51,024
5	R01 GM26268-03 11940	BERGBREITER, DAVID E ELECTROPHILIC ASYMMETRIC SYNTHESIS	TEXAS AGRI AND MECH UNIV	COLLEGE STATION COLLEGE STATION TEXAS	81	09-82	0	MCHA	45,701	60,386
5	R01 GM26428-18 11930	DENNEY, DONALD B PREPARATION AND CHEMISTRY OF ORGANOPHOSPHORUS COMPOUNDS	RUTGERS THE STATE UNIV	NEW BRUNSWICK NEW BRUNSWICK NEW JERSEY	82	04-83	0	MCHA	52,055	82,247
5	R01 GM26553-03 11910	MITSCHER, LESTER A VERSATILE SYNTHESIS OF OPTICALLY PURE PROSTAGLANDINS	UNIVERSITY OF KANSAS	LAWRENCE LAWRENCE KANSAS	81	12-82	0	MCHA	46,398	64,807
5	R01 GM26568-05 11910	SCHULTZ, ARTHUR G SYNTHESIS OF ASPIDOSPERMA AND DENDROBINE ALKALOIDS	RENSSELAER POLYTECHNIC INSTITUTE	TROY NEW YORK	82	08-83	1	MCHA	68,508	108,243
5	R01 GM26574-04 11910	HAUSER, FRANK M STEREOSPECIFIC SYNTHESES OF SELECTED AMINO SUGARS	OREGON GRADUATE CTR STUDY AND RESEARCH	BEAVERTON OREGON	82	03-83	1	MCHA	38,140	61,162
2	R01 GM26782-04 11940	ROUSH, WILLIAM R INTRAMOLECULAR DIELS-ALDER REACTIONS	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	CAMBRIDGE MASSACHUSETTS	82	06-83	2	MCHA	61,068	92,003
5	R01 GM26838-03 11920	SIH, CHARLES J MICROBIAL DEGRADATION OF STEROL SIDE CHAINS	UNIVERSITY OF WISCONSIN MADISON	MADISON WISCONSIN	82	12-82	1	MCHA	53,535	75,362
2	R01 GM26879-04 11910	NICOLAOU, KYRIACOS C "TOTAL SYNTHESIS OF MACROLIDE ANTIBIOTICS"	UNIVERSITY OF PENNSYLVANIA	PHILADELPHIA PENNSYLVANIA	82	08-83	1	MCHA	80,001	128,102
5	R01 GM26908-03 11920	LIOTTA, DENNIS C IMPORTANT COMPOUNDS VIA ORGANOSELENIUM REAGENTS	EMORY UNIVERSITY	ATLANTA GEORGIA	81	03-83	0	MCHA	38,211	54,420

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5	R01 GM26988-03 21100	ENGEL, ROBERT R A CHEMICAL APPROACH TO GENETIC REGULATION	QUEENS COLLEGE	NEW YORK	82 NEW YORK	12-82	0	MCHA 53,790	88,108
5	R01 GM27022-03 11930	CARPENTER, BARRY K TEST OF A NEW THEORY ON STRUCTURE AND REACTIVITY	CORNELL UNIVERSITY ITHACA	ITHACA	82 NEW YORK	12-82	0	MCHA 44,814	70,600
5	R01 GM27137-03 11940	KEANA, JOHN F NEW PROBES AND REAGENTS FOR BIOLOGICAL STUDIES	UNIVERSITY OF OREGON	EUGENE	82 OREGON	01-83	1	MCHA 56,069	75,046
5	R01 GM27251-03 11940	MARIANO, PATRICK S SYNTHESIS OF N-ALLYLIMINIUM SALT-PHOTOCYCLIZATIONS	UNIVERSITY OF MARYLAND COLLEGE PK CAMPUS	COLLEGE PARK	82 MARYLAND	12-82	0	MCHA 46,054	65,397
5	R01 GM27319-06 11920	CASERIO, MARJORIE C ALKYLATION OF DISULFIDES--THIOSULFONIUM IONS	UNIVERSITY OF CALIFORNIA IRVINE	IRVINE	82 CALIFORNIA	07-83	0	MCHA 32,611	45,492
5	R01 GM27320-23 11910	DAUBEN, WILLIAM G MODIFIED STEROID AND POLYTERPENOID ANTITUMOR AGENTS	UNIVERSITY OF CALIFORNIA BERKELEY	BERKELEY	82 CALIFORNIA	11-82	2	MCHA 57,879	75,006
5	R01 GM27355-03 11920	SUKENIK, CHAIM N AQUEOUS MICELLE MEDIATED CHEMICAL SELECTIVITY	CASE WESTERN RESERVE UNIVERSITY	CLEVELAND	82 OHIO	05-83	0	MCHA 49,400	74,594
5	R01 GM27610-03 11920	SCHWAB, JOHN M STEREOCHEMISTRY OF ENZYMATIC RING CLEAVAGE REACTIONS	CATHOLIC UNIVERSITY OF AMERICA	WASHINGTON	82 DIST OF COL	11-82	0	MCHA 47,709	72,518
5	R01 GM27620-03 11930	SCHWEIZER, EDWARD E MULTI RING PYRAZOLOHETEROCYCLES FROM ALLENYL AZINES	UNIVERSITY OF DELAWARE	NEWARK	82 DELAWARE	05-83	1	MCHA 37,179	54,874
5	R01 GM27647-03 11910	HART, DAVID J SYNTHESIS OF BIOLOGICALLY ACTIVE ALKALOIDS	OHIO STATE UNIVERSITY	COLUMBUS	82 OHIO	03-83	0	MCHA 45,989	61,895
5	R01 GM27694-03 11920	BAUMGARTEN, HENRY E CHEMICAL AND ELECTROCHEMICAL OXIDATION STUDIES	UNIVERSITY OF NEBRASKA LINCOLN	LINCOLN	82 NEBRASKA	05-83	2	MCHA 54,577	75,316
5	R01 GM27900-03 21100	SAKAI, TED T SYNTHESIS AND PROPERTIES OF BLEOMYCIN ANALOGS	UNIVERSITY OF ALABAMA IN BIRMINGHAM	BIRMINGHAM	82 ALABAMA	02-83	0	MCHA 48,353	65,663

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5	R01 GM27932-03 11940	REBEK, JULIUS, JR NEW EPOXIDATION REAGENTS	UNIVERSITY OF PITTSBURGH	PITTSBURGH PENNSYLVANIA	82	03-83	0	MCHA		46,824	71,172
5	R01 GM27983-03 11940	TAYLOR, EDWARD C NOVEL AMINO GROUP TRANFORMATIONS IN HETEROCYCLES	PRINCETON UNIVERSITY	PRINCETON NEW JERSEY	82	08-83	0	MCHA		46,836	76,811
5	R01 GM28056-03 11910	WUTS, PETER G ALLYLBORANES IN THE SYNTHESIS OF IONOMYCIN AND ANALOGS	UNIVERSITY OF MICHIGAN AT ANN ARBOR	ANN ARBOR MICHIGAN	82	06-83	0	MCHA		47,568	75,157
5	R01 GM28122-03 11910	STEVENS, ROBERT V THE SYNTHESIS OF ALKALOIDS	UNIVERSITY OF CALIFORNIA LOS ANGELES	LOS ANGELES CALIFORNIA	82	06-83	0	MCHA		70,083	97,205
5	R01 GM28128-03 11910	LIPSHUTZ, BRUCE H NOVEL APPROACHES TO THE CYCLOPEPTIDE ALKALOIDS	UNIVERSITY OF CALIFORNIA SANTA BARBARA	SANTA BARBARA CALIFORNIA	82	07-83	0	MCHA		35,314	48,400
5	R01 GM28193-03 11930	O'DONNELL, MARTIN J SCHIFF BASE SYNTHONS IN AMINO ACID CHEMISTRY	INDIANA UNIV-PURDUE UNIV AT INDIANAPOLIS	INDIANAPOLIS INDIANA	82	07-83	0	MCHA		47,482	68,849
5	R01 GM28273-03 11940	DANHEISER, RICK L PERICYCLIC REACTIONS FOR ORGANIC SYNTHESIS	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	CAMBRIDGE MASSACHUSETTS	82	06-83	0	MCHA		45,349	68,704
5	R01 GM28321-03 11910	BURKE, STEVEN D ANTIBIOTIC, PROSTANOID, AND STEROID TOTAL SYNTHESIS	UNIVERSITY OF SOUTH CAROLINA AT COLUMBIA	COLUMBIA SOUTH CAROLINA	82	06-83	0	MCHA		44,933	65,198
5	R01 GM28468-03 11910	PAQUETTE, LEO A SYNTHETIC ELABORATION OF POLYQUINANE NATURAL PRODUCTS	OHIO STATE UNIVERSITY	COLUMBUS OHIO	82	06-83	0	MCHA		55,073	75,450
5	R01 GM28569-02 11910	MC MURRY, JOHN E ALKALOID SYNTHESIS VIA AZIRIDINIUM IONS	CORNELL UNIVERSITY ITHACA	ITHACA NEW YORK	82	11-82	1	MCHA		51,306	80,026
5	R01 GM28754-09 11910	SHIMIZU, YUZURU DELETERIOUS MICROALGAL TOXINS	UNIVERSITY OF RHODE ISLAND	KINGSTON RHODE ISLAND	82	08-83	0	MCHA		60,933	82,260
5	R01 GM28790-02 11910	WEINREB, STEVEN M SYNTHESIS OF SECURINEGA ALKALOIDS	PENNSYLVANIA STATE UNIVERSITY UNIV PARK	UNIVERSITY PARK PENNSYLVANIA	82	03-83	1	MCHA		61,588	80,568

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5	R01 GM28850-02 11440	LOUDON, G MARC CARBOXYL-TERMINAL PEPTIDE SEQUENCING	PURDUE UNIVERSITY WEST LAFAYETTE	WEST LAFAYETTE INDIANA	82	08-83	1	MCHA		72,655	100,317
5	R01 GM28934-02 11440	BARANY, GEORGE NEW MILD PROTECTION STRATEGIES FOR PEPTIDE SYNTHESIS	UNIVERSITY OF MINNESOTA OF MNPLS-ST PAUL	MINNEAPOLIS MINNESOTA	82	03-83	1	MCHA		59,439	80,837
5	R01 GM28961-02 11910	KECK, GARY E CHIRAL APPROACHES TO ANTIBIOTIC SYNTHESIS	UNIVERSITY OF UTAH	SALT LAKE CITY UTAH	82	05-83	1	MCHA		42,593	61,760
5	R01 GM28968-02 11910	KELLY, T ROSS SYNTHESIS OF STREPTOLYDIGIN AND ITS CONGENERS	BOSTON COLLEGE	CHESTNUT HILL MASSACHUSETTS	82	03-83	1	MCHA		78,828	115,525
5	R01 GM29016-02 11910	MARIANO, PATRICK S MOLECULAR REARRANGEMENTS IN NATURAL PRODUCT SYNTHESIS	UNIVERSITY OF MARYLAND COLLEGE PK CAMPUS	COLLEGE PARK MARYLAND	82	03-83	1	MCHA		40,214	54,164
5	R01 GM29028-02 11910	SMITH, AMOS B, III THE MILBEMYCINS: POTENTIAL ANTILEUKEMIC AGENTS	UNIVERSITY OF PENNSYLVANIA	PHILADELPHIA PENNSYLVANIA	82	03-83	1	MCHA		56,572	88,469
5	R01 GM29073-02 11910	SALOMON, ROBERT G TOTAL SYNTHESIS OF K76: COMPLEMENT CASCADE INHIBITORS	CASE WESTERN RESERVE UNIVERSITY	CLEVELAND OHIO	82	03-83	1	MCHA		32,510	48,580
1	R01 GM29077-01A1 AI 11910	HOYE, THOMAS R ANTIBIOTIC SYNTHESIS	UNIVERSITY OF MINNESOTA OF MNPLS-ST PAUL	MINNEAPOLIS MINNESOTA	82	01-83	2	MCHA		49,210	64,046
5	R01 GM29150-02 11920	GOKEL, GEORGE W SYNTHETIC CALCIUM REGULATORS FOR MUSCLE TISSUE	UNIVERSITY OF MARYLAND COLLEGE PK CAMPUS	COLLEGE PARK MARYLAND	82	05-83	0	MCHA		36,809	52,269
5	R01 GM29195-05 11910	WHITESELL, JAMES K THE TOTAL SYNTHESIS OF SARRACENIN	UNIVERSITY OF TEXAS AUSTIN	AUSTIN TEXAS	82	03-83	1	MCHA		46,216	62,392
5	R01 GM29232-03 11910	WENKERT, ERNEST ALKALOID SYNTHESIS	UNIVERSITY OF CALIFORNIA SAN DIEGO	LA JOLLA CALIFORNIA	82	08-83	1	MCHA		105,525	140,454
5	R01 GM29258-10 11930	EATON, PHILIP E SYNTHESIS OF DODECAHEDRANE AND HETERODODECAHEDRANES	UNIVERSITY OF CHICAGO	CHICAGO ILLINOIS	82	03-83	1	MCHA		107,746	157,533

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5	R01 GM29291-02 11930	MEYER, RICH B, JR MECHANISM PROBES FOR NUCLEOTIDE BIOSYNTHETIC ENZYMES	WASHINGTON STATE UNIVERSITY	PULLMAN	WASHINGTON	82	11-82	0	MCHA 40,212	58,307
5	R01 GM29475-03 11910	MARSHALL, JAMES A SYNTHESIS OF TUMOR INHIBITORY COMPOUNDS	UNIVERSITY OF SOUTH CAROLINA AT COLUMBIA	COLUMBIA	SOUTH CAROLINA	82	08-83	1	MCHA 64,778	93,091
5	R01 GM29540-02 11910	JACOBI, PETER A A SYNTHETIC APPROACH TO SAXITOXIN	WESLEYAN UNIVERSITY	MIDDLETOWN	CONNECTICUT	82	06-83	1	MCHA 48,241	67,317
1	R01 GM29549-01A1 11940	NELSEN, STEPHEN F REACTIVITY OF AMINO NITROGEN COMPOUNDS	UNIVERSITY OF WISCONSIN MADISON	MADISON	WISCONSIN	82	06-83	2	MCHA 42,209	58,104
5	R01 GM29706-02 22300	GOKEL, GEORGE W CA++ SELECTIVE PEPTIDES FOR METABOLIC CONTROL	UNIVERSITY OF MARYLAND AT BALTIMORE	BALTIMORE	MARYLAND	82	11-82	0	MCHA 40,555	61,644
5	R01 GM29767-02 11920	ANDERSON, GARY L PYRIDO(2.3-D)PYRIMIDINE RIBONUCLEOSIDES	UNIVERSITY OF IOWA	IOWA CITY	IOWA	82	05-83	0	MCHA 28,500	39,330
1	R01 GM29801-01A1 11940	MAGNUS, PHILIP D SYNTHESIS OF MOLECULES OF BIOLOGICAL INTEREST	INDIANA UNIVERSITY BLOOMINGTON	BLOOMINGTON	INDIANA	82	03-83	2	MCHA 67,051	92,857
1	R01 GM29972-01A1 CA 11910	GILBERT, JOHN C DEVELOPMENT OF A BIOMIMETIC APPROACH TO TRICHOTHECENES	UNIVERSITY OF TEXAS AUSTIN	AUSTIN	TEXAS	82	07-83	2	MCHA 61,470	78,697
1	R01 GM30052-01A1 11940	POSNER, GARY H ASYMMETRIC SYNTHESIS OF PHYSIOLOGICALLY ACTIVE COMPOUNDS	JOHNS HOPKINS UNIVERSITY	BALTIMORE	MARYLAND	82	08-83	2	MCHA 53,620	77,080
1	R01 GM30072-01 11840	BLAKE, JAMES J CHEMICAL SYNTHESIS OF PROTEINS	UNIVERSITY OF CALIFORNIA SAN FRANCISCO	SAN FRANCISCO	CALIFORNIA	82	07-83	2	MCHA 55,556	70,948
1	R01 GM30073-01 11910	CHAMBERLIN, A RICHARD SYNTHESIS OF ALKALOIDS BY POLYENE CYCLIZATION	UNIVERSITY OF CALIFORNIA IRVINE	IRVINE	CALIFORNIA	82	01-83	2	MCHA 44,832	58,435
1	R01 GM30081-01 11940	MIDLAND, M MARK STEREOSPECIFIC SYNTHESIS STEROID SIDE-CHAIN METABOLITES	UNIVERSITY OF CALIFORNIA RIVERSIDE	RIVERSIDE	CALIFORNIA	82	07-83	2	MCHA 48,308	66,472

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1	R01 GM30141-01 11940	BARTLETT, PAUL A SYNTHESIS OF POLYETHER NATURAL PRODUCTS	UNIVERSITY OF CALIFORNIA BERKELEY	BERKELEY CALIFORNIA	82	01-83	4	96,057	MCHA 121,495
1	R01 GM30255-01A1 11910	COMINS, DANIEL L ALKALOID SYNTHESIS VIA 2-ALKENYL-1,2-DIHYDROPYRIDINES	UTAH STATE UNIVERSITY	LOGAN UTAH	82	07-83	2	29,828	MCHA 39,393
1	R01 GM30293-01 11940	HOUK, KENDALL N STEREOSELECTIVITIES OF SYNTHETIC ORGANIC REACTIONS	UNIVERSITY OF PITTSBURGH	PITTSBURGH PENNSYLVANIA	82	01-83	2	81,717	MCHA 121,350
1	R01 GM30301-01 11920	CANE, DAVID E STEREOCHEMICAL STUDIES OF ISOPRENOID BIOSYNTHESIS	BROWN UNIVERSITY	PROVIDENCE RHODE ISLAND	82	12-82	2	66,000	MCHA 99,282
5	R01 GM30310-02 11930	DAVES, G DOYLE, JR PALLADIUM CATALYZED SYNTHESIS OF C-NUCLEOSIDES	LEHIGH UNIVERSITY	BETHLEHEM PENNSYLVANIA	82	06-83	0	49,448	MCHA 83,567
1	R01 GM30335-01 AI 11940	IRELAND, ROBERT E 3-ACYLTETRAMIC ACID ANTIBIOTIC SYNTHESIS	CALIFORNIA INSTITUTE OF TECHNOLOGY	PASADENA CALIFORNIA	82	01-83	2	51,000	MCHA 70,680
1	R01 GM30343-01 CA 11910	STERNBACH, DANIEL D CHIRAL SYNTHESIS: METHYLENOMYCIN & PEDERIN	DUKE UNIVERSITY	DURHAM NORTH CAROLINA	82	01-83	2	63,098	MCHA 86,098
1	R01 GM30350-01 CA 11910	COLLUM, DAVID B THE SYNTHESIS OF ANTITUMOR AGENTS	CORNELL UNIVERSITY ITHACA	ITHACA NEW YORK	82	01-83	3	65,150	MCHA 88,033
5	R01 GM30354-02 11910	SNIDER, BARRY B PSEUDOMONIC ACID A TOTAL SYNTHESIS VIA NEIGHBORING GROUP	BRANDEIS UNIVERSITY	WALTHAM MASSACHUSETTS	82	08-83	1	44,594	MCHA 80,269
1	R01 GM30369-01 11940	STREITWIESER, ANDREW ION PAIR CARBON ACIDITY	UNIVERSITY OF CALIFORNIA BERKELEY	BERKELEY CALIFORNIA	82	04-83	2	57,605	MCHA 74,021
1	R01 GM30373-01 11910	PEARSON, ANTHONY J STEROID, C-NOR-D-HOMOSTEROID, AND APHIDICOLIN SYNTHESES	CASE WESTERN RESERVE UNIVERSITY	CLEVELAND OHIO	82	07-83	2	88,312	MCHA 110,196
1	R01 GM30390-01 11910	TIUS, MARCUS A TOTAL SYNTHESIS OF (-) - ASPERDIOL	UNIVERSITY OF HAWAII AT MANOA	HONOLULU HAWAII	82	05-83	2	41,347	MCHA 53,857

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2	R01 GM30528-02 11940	SNIDER, BARRY B NEW CARBON-CARBON BOND FORMING REACTIONS OF ALKENES	BRANDEIS UNIVERSITY	WALTHAM MASSACHUSETTS	82	02-83	2	MCHA		66,295	101,198
1	R01 GM30696-01 11940	KELLY, T ROSS HETEROCYCLIC SYNTHESIS: RUBROLONE AND OTHER PYRIDINES	BOSTON COLLEGE	CHESTNUT HILL MASSACHUSETTS	82	04-83	2	MCHA		72,755	102,036
1	R01 GM30735-01 11940	HOUSE, HERBERT O SPECIAL STRUCTURAL FEATURES TO CONTROL REACTIONS	GEORGIA INSTITUTE OF TECHNOLOGY	ATLANTA GEORGIA	82	05-83	2	MCHA		62,298	94,967
1	R01 GM30738-01 11940	SCHREIBER, STUART L THE UTILITY OF PEROXIDES IN ORGANIC SYNTHESIS	YALE UNIVERSITY	NEW HAVEN CONNECTICUT	82	04-83	2	MCHA		71,693	106,315
1	R01 GM30743-01 CA 11940	DE SHONG, PHILIP R NITRONE CYCLOADDITIONS/THE SYNTHESIS OF AMINO SUGARS	PENNSYLVANIA STATE UNIVERSITY UNIV PARK	UNIVERSITY PARK PENNSYLVANIA	82	08-83	2	MCHA		75,065	90,929
9	R01 GM30759-08 CA 11910	BARTLETT, PAUL A SYNTHESIS OF MACROCYCLIC NATURAL PRODUCTS	UNIVERSITY OF CALIFORNIA BERKELEY	BERKELEY CALIFORNIA	82	03-83	4	MCHA		81,738	102,489
1	R01 GM30771-01 CA 11910	RIGBY, JAMES H TOTAL SYNTHESIS OF SOME CYTOTOXIC GUAIANOLIDES	WAYNE STATE UNIVERSITY	DETROIT MICHIGAN	82	04-83	2	MCHA		43,670	59,356
1	R01 GM30787-01 11940	BERSON, JEROME A MECHANISTIC BASES OF SYNTHETIC STRATEGY	YALE UNIVERSITY	NEW HAVEN CONNECTICUT	82	08-83	2	MCHA		62,955	100,324
1	R01 GM30859-01 11940	OVERMAN, LARRY E GENERAL METHODS FOR SYNTHESIS OF BIOACTIVE AZACYCLICS	UNIVERSITY OF CALIFORNIA IRVINE	IRVINE CALIFORNIA	82	07-83	2	MCHA		59,319	81,032
1	R01 GM30875-01 11940	COLLUM, DAVID B ASSISTED ELECTROPHILIC OPENING OF CYCLOPROPANES	CORNELL UNIVERSITY ITHACA	ITHACA NEW YORK	82	08-83	2	MCHA		63,680	89,042
9	R01 GM30932-07 CA 11910	CUSHMAN, MARK S NEW ALKALOID SYNTHESES	PURDUE UNIVERSITY WEST LAFAYETTE	WEST LAFAYETTE INDIANA	82	06-83	2	MCHA		54,316	74,966
1	R01 GM30938-01 11940	DENMARK, SCOTT E INTRAMOLECULAR NITROSOALKENE-OLEFIN CYCLOADDITIONS	UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN	URBANA ILLINOIS	82	07-83	2	MCHA		36,748	50,336

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1	R01 GM31051-01 11910	WALBA, DAVID M TOTAL SYNTHESES OF ZOAPATANOL AND EUNICELLINS	UNIVERSITY OF COLORADO AT BOULDER	BOULDER COLORADO	82	07-83	2	MCHA		42,999	58,131
1	R01 GM31215-01 21100	SHINER, CHRISTOPHER S A NEW CLASS OF CHIRAL BORANES; SYNTHESIS OF RIFAMYCINS	UNIVERSITY OF COLORADO AT BOULDER	BOULDER COLORADO	82	08-83	2	MCHA		44,385	60,511
9	R01 GM31256-06 CA 11910	SCHLESSINGER, RICHARD H TOTAL SYNTHESIS OF QUASSINOIDS	UNIVERSITY OF ROCHESTER	ROCHESTER NEW YORK	82	03-83	2	MCHA		92,993	141,946
9	R01 GM31352-04 AI 11910	SEMMELHACK, MARTIN F NATURAL PRODUCT SYNTHESES	PRINCETON UNIVERSITY	PRINCETON NEW JERSEY	82	03-83	2	MCHA		75,924	124,515
***	0	* CENTERS								0	0
***	130	NONCENTERS								7,713,088	11,085,395
***	130	TOTAL								7,713,088	11,085,395
5	R01 GM17880-12 11920	COLLMAN, JAMES P MODELS FOR CYTOCHROME P450 HYDROXYLASES	STANFORD UNIVERSITY	STANFORD CALIFORNIA	82	11-82	0	MCHB		79,602	125,771
5	R01 GM20993-08 12820	HORVATH, CSABA G LIQUID CHROMATOGRAPHY OF BIOLOGICAL SUBSTANCES	YALE UNIVERSITY	NEW HAVEN CONNECTICUT	82	01-83	0	MCHB		61,966	97,906
5	R01 GM24748-03 11920	PIZER, RICHARD D THE DYNAMICS OF CRYPTATE FORMATION	BROOKLYN COLLEGE	NEW YORK NEW YORK	82	12-82	0	MCHB		17,756	28,694
5	R01 GM28497-02 11940	GREEN, MARK R DYNAMIC STEREOCHEMISTRY	POLYTECHNIC INSTITUTE OF NEW YORK	NEW YORK NEW YORK	81	11-82	0	MCHB		39,809	64,602
***	0	* CENTERS								0	0
***	4	NONCENTERS								199,133	316,973
***	4	TOTAL								199,133	316,973

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5	R01 GM16811-13 11770	HARDMAN, JOEL G ROLE OF CYCLIC GMP: CONTROL OF CYCLIC GMP METABOLISM	VANDERBILT UNIVERSITY	NASHVILLE TENNESSEE	82	12-82	2	MET	97,821	151,133
5	R01 GM22825-06 13420	TURINSKY, JIRI MECHANISM OF INSULIN RESISTANCE AFTER BURNS	ALBANY MEDICAL COLLEGE	ALBANY NEW YORK	81	02-83	0	MET	43,605	64,535
5	R01 GM26153-04 21400	ALLEN, DONALD O BIOCHEMISTRY OF INHERITED VARIATIONS IN DRUG RESPONSE	UNIVERSITY OF SOUTH CAROLINA AT COLUMBIA	COLUMBIA SOUTH CAROLINA	81	06-83	0	MET	41,879	56,800
***	0	* CENTERS							0	0
***	3	NONCENTERS							183,305	272,468
***	3	TOTAL							183,305	272,468
2	R01 GM12010-19 21310	CHAMBERLIN, MICHAEL J SELECTIVITY OF BACTERIAL TRANSCRIPTION	UNIVERSITY OF CALIFORNIA BERKELEY	BERKELEY CALIFORNIA	82	03-83	4	MG	155,800	195,716
2	R01 GM12522-18 21750	UMBARGER, H EDWIN ENZYMIC MECHANISMS IN BIOSYNTHETIC PATHWAYS	PURDUE UNIVERSITY WEST LAFAYETTE	WEST LAFAYETTE INDIANA	82	11-82	4	MG	158,607	220,069
2	R01 GM13017-18 21750	BECKWITH, JONATHAN R REGULATION OF RBS & OTHER CAMP-DEPENDENT GENES IN E COLI	HARVARD UNIVERSITY	BOSTON MASSACHUSETTS	82	08-83	4	MG	63,527	119,189
5	R01 GM14108-17 21200	GANESAN, ADAYAPALAM T DNA SYNTHESIS AND GENETIC RECOMBINATION IN B. SUBTILIS	STANFORD UNIVERSITY	STANFORD CALIFORNIA	82	07-83	2	MG	81,878	129,367
2	R01 GM14372-16 AI 21200	NOVICK, RICHARD P MOLECULAR BIOLOGY OF BACTERIAL PLASMIDS	PUBLIC HLTH RES INST OF THE CITY OF NY	NEW YORK NEW YORK	82	11-82	4	MG	105,615	146,355

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5	R01 GM14652-16 21750	LEE, NANCY L GENETIC CONTROL OF PROTEIN SYNTHESIS IN E. COLI	UNIVERSITY OF CALIFORNIA	SANTA BARBARA SANTA BARBARA CALIFORNIA	82	12-82	1	MG 67,982	89,056
2	R01 GM14711-16 21200	INMAN, ROSS B STRUCTURE AND REPLICATION OF DNA	UNIVERSITY OF WISCONSIN	MADISON MADISON WISCONSIN	82	12-82	4	MG 110,930	155,733
2	R01 GM15142-13A1 21750	BREMER, HANS REGULATION OF BACTERIAL GROWTH	UNIVERSITY OF TEXAS DALLAS	RICHARDSON TEXAS	82	06-83	2	MG 76,922	100,240
5	R01 GM15255-17 21250	MARGOLIN, PAUL MUTATION AND SUPPRESSOR STUDIES OF A BACTERIAL GENE	PUBLIC HLTH RES INST OF THE CITY OF NY	NEW YORK NEW YORK	82	05-83	1	MG 120,154	168,597
5	R01 GM16329-15 21200	HILL, CHARLES W GENETICS AND BIOCHEMISTRY OF MISSENSE SUPPRESSION	PENNSYLVANIA STATE UNIV HERSHEY MED CTR	HERSHEY PENNSYLVANIA	82	08-83	2	MG 119,589	158,413
5	R01 GM17088-13 21200	DRESSLER, DAVID H STUDIES ON DNA REPLICATION AND RECOMBINATION	HARVARD UNIVERSITY	CAMBRIDGE MASSACHUSETTS	82	11-82	3	MG 60,808	93,644
2	R01 GM17152-14 21750	FREUNDLICH, MARTIN MOLECULAR MECHANISMS IN MULTIVALENT REPRESSION	STATE UNIVERSITY NEW YORK STONY BROOK	STONY BROOK NEW YORK	82	08-83	2	MG 67,042	96,569
5	R01 GM18386-13 21750	GEIDUSCHEK, E PETER NUCLEIC ACIDS AND NUCLEOPROTEINS	UNIVERSITY OF CALIFORNIA SAN DIEGO	LA JOLLA CALIFORNIA	82	08-83	2	MG 173,448	228,576
2	R01 GM19020-14 21200	LINN, STUART M IN VITRO RESTRICTION AND MODIFICATION OF PHAGE DNA	UNIVERSITY OF CALIFORNIA BERKELEY	BERKELEY CALIFORNIA	82	12-82	4	MG 93,627	119,551
2	R01 GM19416-11 21700	HOCH, JAMES A GENETIC CONTROL OF DEVELOPMENT	SCRIPPS CLINIC AND RESEARCH FOUNDATION	LA JOLLA CALIFORNIA	82	06-83	4	MG 135,546	220,919
5	R01 GM19422-11 21320	ALTMAN, SIDNEY TRNA: STUDIES OF PRECURSORS, MUTANTS, AND FUNCTION	YALE UNIVERSITY	NEW HAVEN CONNECTICUT	82	08-83	1	MG 85,161	141,030
2	R01 GM19559-10 22200	PARKINSON, JOHN S GENETICS OF CHEMOTACTIC BEHAVIOR IN ESCHERICHIA COLI	UNIVERSITY OF UTAH	SALT LAKE CITY UTAH	82	05-83	4	MG 74,199	106,239

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5	R01 GM19673-11 21750	DOI, ROY H ROLE OF RNA POLYMERASE IN BACTERIAL DIFFERENTIATION	UNIVERSITY OF CALIFORNIA	DAVIS DAVIS CALIFORNIA	82	08-83	3	MG 66,863	90,733
5	R01 GM20173-10 21750	MARRS, BARRY L THE REGULATION OF BACTERIAL MEMBRANE FORMATION	ST. LOUIS UNIVERSITY	SAINT LOUIS MISSOURI	82	07-83	3	MG 89,828	134,742
2	R01 GM20509-10 22200	ZUSMAN, DAVID R BIOCHEMICAL STUDIES OF DEVELOPMENT IN BACTERIA	UNIVERSITY OF CALIFORNIA	BERKELEY BERKELEY CALIFORNIA	82	07-83	4	MG 72,316	99,219
5	R01 GM20884-09 22400	FUCHS, JAMES A DEOXYRIBONUCLEOTIDE METABOLISM IN ESCHERICHIA COLI	UNIVERSITY OF MINNESOTA OF MNPLS-ST PAUL	MINNEAPOLIS MINNESOTA	82	08-83	0	MG 63,504	88,271
5	R01 GM21422-07 21250	GOODMAN, MYRON F ERROR CORRECTION IN DNA SYNTHESIS: A BIOCHEMICAL STUDY	UNIVERSITY OF SOUTHERN CALIFORNIA	LOS ANGELES CALIFORNIA	82	08-83	3	MG 83,408	126,554
5	R01 GM21499-08 21320	MURGOLA, EMANUEL J MISSENSE SUPPRESSION AND MUTATIONALLY ALTERED TRNAS	UNIVERSITY OF TEXAS SYSTEM CANCER CENTER	HOUSTON TEXAS	82	02-83	3	MG 43,448	60,175
2	R01 GM21783-08A1 AI 21310	MC ALLISTER, WILLIAM T REGULATION OF VIRAL GENE EXPRESSION	RUTGERS MEDICAL SCHOOL	PISCATAWAY NEW JERSEY	82	06-83	4	MG 53,433	78,673
5	R01 GM21941-08 21750	ROBERTS, JEFFREY W GENE CONTROL IN INFECTION & LYSOGENY BY PHAGE LAMBDA	CORNELL UNIVERSITY ITHACA	ITHACA NEW YORK	82	01-83	3	MG 104,644	145,815
5	R01 GM21960-08 21200	HUANG, WAI M DNA INITIATION AND REPLICATION	UNIVERSITY OF UTAH	SALT LAKE CITY UTAH	82	03-83	1	MG 67,255	96,620
5	R01 GM22007-08 21780	OHTSUBO, EIICHI STRUCTURE AND FUNCTION OF INSERTION AND TN ELEMENTS	STATE UNIVERSITY NEW YORK STONY BROOK	STONY BROOK NEW YORK	82	01-83	3	MG 104,704	152,033
2	R01 GM22092-07 21200	KOGOMA, TOKIO DNA REPLICATION IN E. COLI: REGULATORY MUTANTS	UNIVERSITY OF NEW MEXICO ALBUQUERQUE	ALBUQUERQUE NEW MEXICO	82	02-83	2	MG 61,040	83,625
2	R01 GM22586-07 21200	HAYS, JOHN B DNA STRUCTURES WHICH STIMULATE GENETIC RECOMBINATION	UNIVERSITY OF MARYLAND BALT CO CAMPUS	CATONSVILLE MARYLAND	82	08-83	4	MG 109,593	149,796

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2	R01 GM22877-07 21750	SUSSKIND, MIRIAM M INTERACTING REGULATORS OF GENE EXPRESSION	UNIVERSITY OF MASSACHUSETTS MEDICAL SCH	WORCESTER MASSACHUSETTS	82	03-83	4	MG 75,525	124,823
5	R01 GM23016-07 21200	EPSTEIN, WOLFGANG FUNCTION OF THE RECA PROTEIN OF E. COLI	UNIVERSITY OF CHICAGO	CHICAGO ILLINOIS	82	08-83	0	MG 36,713	58,015
2	R01 GM23408-06 21320	ROTH, JOHN R TRANSFER RNA PRODUCTION AND ROLE IN GENE REGULATION	UNIVERSITY OF UTAH	SALT LAKE CITY UTAH	82	12-82	4	MG 114,000	163,950
5	R01 GM24178-06 21250	LITTLE, JOHN W BIOCHEMICAL ANALYSIS OF THE E. COLI LEXA GENE PRODUCT	UNIVERSITY OF ARIZONA	TUCSON ARIZONA	82	07-83	2	MG 79,000	106,612
5	R01 GM24212-06 21200	POLISKY, BARRY A MOLECULAR BASIS OF UNCONTROLLED REPLICATION	INDIANA UNIVERSITY BLOOMINGTON	BLOOMINGTON INDIANA	82	06-83	2	MG 72,938	102,889
5	R01 GM24270-05 21780	PATO, MARTIN L EXCISION AND REPLICATION OF MU VIRUS DNA	NATIONAL JEWISH HOSPITAL & RESEARCH CTR	DENVER COLORADO	82	12-82	3	MG 57,000	82,935
5	R01 GM24320-06 21600	DRLICA, KARL A STRUCTURE OF THE BACTERIAL CHROMOSOME	UNIVERSITY OF ROCHESTER	ROCHESTER NEW YORK	82	08-83	2	MG 67,418	117,307
5	R01 GM24347-05 21780	JASKUNAS, S RICHARD GENETIC REARRANGEMENTS	INDIANA UNIVERSITY BLOOMINGTON	BLOOMINGTON INDIANA	82	11-82	1	MG 79,736	110,200
5	R01 GM24365-06 21320	SERWER, PHILIP BIOPHYSICS AND GENETICS OF VIRAL DNA PACKAGING	UNIVERSITY OF TEXAS HLTH SCI CTR SAN ANT	SAN ANTONIO TEXAS	82	06-83	0	MG 54,155	73,651
5	R01 GM24391-06 21200	SINHA, NAVIN K IN VITRO ANALYSIS OF A DNA REPLICATION APPARATUS	RUTGERS THE STATE UNIV NEW BRUNSWICK	NEW BRUNSWICK NEW JERSEY	82	07-83	0	MG 54,188	85,037
5	R01 GM24496-05 21200	MOUNT, DAVID W MECHANISM OF INDUCTION OF VIRAL AND CELLULAR FUNCTIONS	UNIVERSITY OF ARIZONA	TUCSON ARIZONA	82	12-82	3	MG 86,172	122,366
5	R01 GM24544-06 21200	WANG, JAMES C PHYSICOCHEMICAL STUDIES OF NUCLEIC ACIDS	HARVARD UNIVERSITY	CAMBRIDGE MASSACHUSETTS	82	06-83	2	MG 125,954	192,349

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5	R01 GM24576-05 21320	ELSEVIERS, DIRK ACCURACY IN GENE EXPRESSION	NEW YORK MEDICAL COLLEGE	VALHALLA	NEW YORK	82	12-82	1	MG 48,412	77,943
5	R01 GM24589-05 21780	DEONIER, RICHARD C SPECIALIZED RECOMBINATION IN THE E COLI CHROMOSOME	UNIVERSITY OF SOUTHERN CALIFORNIA	LOS ANGELES	CALIFORNIA	82	12-82	3	MG 67,856	99,070
5	R01 GM24956-05 21750	BARNES, WAYNE M HISTIDINE OPERON: GENETIC CONTROL AND DNA SEQUENCE	WASHINGTON UNIVERSITY	SAINT LOUIS	MISSOURI	82	12-82	3	MG 74,185	113,887
5	R01 GM24960-05 21780	SHAPIRO, JAMES A DNA INSERTION MECHANISMS: TRANSPOSONS AND CARCINOGENS	UNIVERSITY OF CHICAGO	CHICAGO	ILLINOIS	82	12-82	3	MG 115,345	180,237
5	R01 GM25178-05 21600	SQUIRES, CATHERINE L TOTAL DNA SEQUENCES OF RIBOSOMAL RNA CISTRONS	COLUMBIA UNIVERSITY	NEW YORK	NEW YORK	82	03-83	3	MG 87,970	146,086
5	R01 GM25286-05 21750	GLASER, GAD STRUCTURE AND CONTROL OF E. COLI ACTIVITY	HEBREW UNIVERSITY OF JERUSALEM	JERUSALEM	ISRAEL	82	07-83	1	MG 50,881	50,881
5	R01 GM25326-05 21780	KLECKNER, NANCY E ILLEGITIMATE RECOMBINATION BY DRUG RESISTANCE ELEMENTS	HARVARD UNIVERSITY	CAMBRIDGE	MASSACHUSETTS	82	06-83	3	MG 93,118	143,402
2	R01 GM25417-04 AI 21750	SNUSTAD, D PETER GENETICS OF VIRUS-INDUCED SHUTOFF OF HOST METABOLISM	UNIVERSITY OF MINNESOTA OF MNPLS-ST PAUL	MINNEAPOLIS	MINNESOTA	82	03-83	2	MG 63,381	84,499
5	R01 GM25500-05 21200	DEPEW, RICHARD E BACTERIAL W PROTEINS: BIOCHEMISTRY AND GENETICS	NORTHEASTERN OHIO UNIVERSITIES COLL MED	ROOTSTOWN	OHIO	82	06-83	3	MG 66,367	98,715
5	R01 GM25508-05 21200	CAMPBELL, JUDITH L ENZYMATIC MECHANISMS OF DNA REPLICATION	CALIFORNIA INSTITUTE OF TECHNOLOGY	PASADENA	CALIFORNIA	82	08-83	3	MG 64,814	95,445
5	R01 GM25526-05 21200	BIRD, ROBERT E CONTROL OF PLASMID DNA REPLICATION IN E COLI	VANDERBILT UNIVERSITY	NASHVILLE	TENNESSEE	82	07-83	3	MG 59,958	93,543
2	R01 GM25530-04A1 21200	BEATTIE, KENNETH L A BIOCHEMICAL STUDY OF ERROR-PRONE DNA SYNTHESIS	BAYLOR COLLEGE OF MEDICINE	HOUSTON	TEXAS	82	06-83	2	MG 95,994	118,691

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2	R01 GM25604-04 21200	KLINE, BRUCE C GENETICS OF PLASMID REPLICATION AND INCOMPATIBILITY	MAYO FOUNDATION	ROCHESTER	MINNESOTA	82	11-82	2	MG		68,989	88,304
2	R01 GM25605-04 21750	JACKSON, JULIUS H CONTROL OF RELATED DISPERSED GENES AND GENE PRODUCTS	MEHARRY MEDICAL COLLEGE	NASHVILLE	TENNESSEE	82	11-82	2	MG		67,828	78,514
5	R01 GM25617-05 21750	BOURGEOIS-COHN, SUZANNE MECHANISMS OF PROTEIN-NUCLEIC ACID INTERACTIONS	SALK INSTITUTE FOR BIOLOGICAL STUDIES	LA JOLLA	CALIFORNIA	82	08-83	3	MG		96,933	155,295
2	R01 GM25621-04 21200	GUMPORT, RICHARD I STUDIES WITH T4 RNA LIGASE	UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN	URBANA	ILLINOIS	82	11-82	4	MG		77,152	101,453
2	R01 GM25644-05 21700	NEWTON, AUSTIN GENETICS OF CELL CYCLE AND DEVELOPMENT IN CAULOBACTER	PRINCETON UNIVERSITY	PRINCETON	NEW JERSEY	82	06-83	4	MG		65,039	104,104
2	R01 GM25855-04 21320	PARKER, JACK M HIGH LEVEL MISTRANSLATION - PROKARYOTIC/EUKARYOTIC CELLS	SOUTHERN ILLINOIS UNIVERSITY CARBONDALE	CARBONDALE	ILLINOIS	82	05-83	3	MG		74,381	98,006
2	R01 GM25871-04 21600	HOLMES, WALTER M GENE ORGANIZATION AND EXPRESSION OF TRNA	VIRGINIA COMMONWEALTH UNIVERSITY	RICHMOND	VIRGINIA	82	11-82	4	MG		64,747	94,089
2	R01 GM26017-04 AI 21200	KOLODNER, RICHARD D ENZYMATIC MECHANISMS OF GENETIC RECOMBINATION	SIDNEY FARBER CANCER INSTITUTE	BOSTON	MASSACHUSETTS	82	11-82	4	MG		105,401	161,841
2	R01 GM26422-04 21200	PORTER, RONALD D EFFECTS OF DNA SUBSTRATES ON RECOMBINATION IN E. COLI	PENNSYLVANIA STATE UNIVERSITY UNIV PARK	UNIVERSITY PARK	PENNSYLVANIA	82	03-83	2	MG		59,330	76,391
2	R01 GM26437-04 21310	BENNETT, GEORGE N STRUCTURE-FUNCTION STUDY OF BACTERIAL PROMOTERS	RICE UNIVERSITY	HOUSTON	TEXAS	82	03-83	2	MG		74,715	100,806
2	R01 GM26689-04 21250	CHAO, LEE RNA POLYMERASE MEDIATED MUTAGENESIS AND DNA REPAIR	MEDICAL UNIVERSITY OF SOUTH CAROLINA	CHARLESTON	SOUTH CAROLINA	82	08-83	2	MG		54,998	71,710
2	R01 GM26863-04 AI 21750	FIGURSKI, DAVID H REPRODUCTION OF EXTRACHROMOSOMAL ELEMENTS IN BACTERIA	COLUMBIA UNIVERSITY	NEW YORK	NEW YORK	82	08-83	2	MG		65,434	105,465

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2	R01 GM26878-04 AI 21750	STAUFFER, GEORGE V REGULATION OF ONE CARBON METABOLISM	UNIVERSITY OF IOWA	IOWA CITY IOWA	82	06-83	2	MG 70,348	92,051
5	R01 GM27113-02 21750	WOLF, RICHARD E, JR GROWTH RATE-DEPENDENT CONTROL OF GENE EXPRESSION	UNIVERSITY OF MARYLAND BALT CO CAMPUS	CATONSVILLE MARYLAND	82	03-83	1	MG 59,699	88,802
2	R01 GM27817-03 21250	LE CLERC, JOSEPH E MECHANISMS OF MUTAGENESIS DURING DNA REPLICATION	UNIVERSITY OF ROCHESTER	ROCHESTER NEW YORK	82	03-83	2	MG 50,440	82,446
5	R01 GM27819-02 21250	PERSON, STANLEY IN VITRO MUTAGENESIS OF DNA	PENNSYLVANIA STATE UNIVERSITY UNIV PARK	UNIVERSITY PARK PENNSYLVANIA	82	12-82	1	MG 58,947	79,268
5	R01 GM27973-02 21750	IVARIE, ROBERT D REGULATION OF R PLASMID GENES IN ESCHERICHIA COLI	UNIVERSITY OF GEORGIA	ATHENS GEORGIA	81	05-83	3	MG 80,159	109,248
5	R01 GM27997-03 21200	KUSHNER, SIDNEY R A BIOCHEMICAL ANALYSIS OF GENETIC RECOMBINATION	UNIVERSITY OF GEORGIA	ATHENS GEORGIA	82	12-82	1	MG 60,919	83,885
5	R01 GM28001-03 21280	SNYDER, LOREN R INTRACELLULAR DNA STRUCTURES AND TRANSCRIPTION	MICHIGAN STATE UNIVERSITY	EAST LANSING MICHIGAN	82	07-83	0	MG 66,838	94,242
5	R01 GM28013-03 21200	ITO, JUNETSU REPLICATION OF LINEAR DNA MOLECULES	UNIVERSITY OF ARIZONA	TUCSON ARIZONA	82	06-83	3	MG 80,388	107,800
5	R01 GM28021-03 21600	LAWTHER, ROBERT P REGULATION OF THE ILVGEDA OPERON BY ATTENUATION	UNIVERSITY OF SOUTH CAROLINA AT COLUMBIA	COLUMBIA SOUTH CAROLINA	82	06-83	0	MG 60,360	80,817
5	R01 GM28038-02 21780	ZAHLER, STANLEY A THE DNA OF SPECIALIZED TRANSDUCING PHASE SPBETA	CORNELL UNIVERSITY ITHACA	ITHACA NEW YORK	81	11-82	0	MG 37,656	50,105
5	R01 GM28113-03 21200	MASKER, WARREN E THE FIDELITY OF IN VITRO DNA REPAIR AND REPLICATION	OAK RIDGE NATIONAL LABORATORY	OAK RIDGE TENNESSEE	82	08-83	0	MG 57,112	57,112
5	R01 GM28133-03 21200	SUEOKA, NOBORU IN VITRO INITIATION OF BACILLUS SUBTILIS CHROMOSOME	UNIVERSITY OF COLORADO AT BOULDER	BOULDER COLORADO	82	06-83	1	MG 48,147	67,358

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5	R01 GM28138-03 21750	TAKEDA, YOSHINORI DEVELOPMENTAL SWITCH IN PHAGE LAMBDA	UNIVERSITY OF MARYLAND BALT CO CAMPUS	CATONSVILLE MARYLAND	82	06-83	0	MG	55,262	80,638
5	R01 GM28142-03 21780	SYVANEN, MICHAEL GENETIC ANALYSIS OF TRANSPOSABLE ELEMENTS	HARVARD UNIVERSITY	BOSTON MASSACHUSETTS	82	06-83	1	MG	76,607	148,081
5	R01 GM28214-03 21750	JOHNSON, JAMES R REGULATION OF METHIONINE BIOSYNTHESIS IN E. COLI K12	TEXAS AGRI AND MECH UNIV COLLEGE STATION	COLLEGE STATION TEXAS	82	06-83	0	MG	42,475	54,213
5	R01 GM28220-03 21200	STERNGLANZ, ROLF ISOLATION OF AN E. COLI DNA TOPOISOMERASE I MUTANT	STATE UNIVERSITY NEW YORK STONY BROOK	STONY BROOK NEW YORK	82	06-83	0	MG	41,102	61,222
5	R01 GM28297-03 21250	HUTCHINSON, FRANKLIN MECHANISMS OF MUTAGENESIS	YALE UNIVERSITY	NEW HAVEN CONNECTICUT	82	07-83	0	MG	61,451	102,558
5	R01 GM28370-03 21750	WULFF, DANIEL L CONTROL OF TRANSCRIPTION AT THE LAMBDA PRE PROMOTER	STATE UNIVERSITY OF NEW YORK AT ALBANY	ALBANY NEW YORK	82	06-83	3	MG	74,489	106,830
5	R01 GM28430-02 21200	EBERLE, HELEN I REGULATION OF DNA REPLICATION	UNIVERSITY OF ROCHESTER	ROCHESTER NEW YORK	82	01-83	1	MG	55,022	95,738
5	R01 GM28444-02 21700	ORIAS, EDUARDO MATING TYPE DETERMINATION IN TETRAHYMENA	UNIVERSITY OF CALIFORNIA SANTA BARBARA	SANTA BARBARA CALIFORNIA	82	11-82	1	MG	74,754	97,928
5	R01 GM28470-03 21780	GRINDLEY, NIGEL D MECHANISM OF INSERTION SEQUENCE TRANSLOCATION	YALE UNIVERSITY	NEW HAVEN CONNECTICUT	82	06-83	3	MG	79,226	132,556
5	R01 GM28488-02 21200	STEWART, CHARLES R MECHANISM OF PHAGE DNA REPLICATION	RICE UNIVERSITY	HOUSTON TEXAS	82	12-82	1	MG	62,668	85,855
5	R01 GM28575-02 21750	BURGESS, RICHARD R RNA POLYMERASE SIGMA SUBUNIT: STRUCTURE AND FUNCTION	UNIVERSITY OF WISCONSIN MADISON	MADISON WISCONSIN	82	11-82	3	MG	63,374	87,264
5	R01 GM28609-02 21780	PORTER, RONALD D DEVELOPMENT OF GENETIC ANALYSIS IN BLUE-GREEN ALGAE	PENNSYLVANIA STATE UNIVERSITY UNIV PARK	UNIVERSITY PARK PENNSYLVANIA	82	01-83	1	MG	60,299	82,007

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5	R01 GM28717-02 21750	GARDNER, JEFFREY F REGULATORY MUTATIONS IN THE THREONINE OPERON	UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN	URBANA ILLINOIS	82	11-82	1	MG	58,160	81,548
5	R01 GM28749-02 21750	BOYER, HERBERT W DISSECTION OF PROCARYOTIC PROMOTER FUNCTIONS	UNIVERSITY OF CALIFORNIA SAN FRANCISCO	SAN FRANCISCO CALIFORNIA	82	01-83	3	MG	86,877	113,809
5	R01 GM28924-03 21280	GUINEY, DONALD G MECHANISM OF PLASMID DNA TRANSFER IN BACTERIA	UNIVERSITY OF CALIFORNIA SAN DIEGO	LA JOLLA CALIFORNIA	82	08-83	0	MG	46,565	61,647
5	R01 GM28925-03 21280	MINKLEY, EDWIN G, JR CONJUGAL TRANSFER OF PLASMIDS	CARNEGIE-MELLON UNIVERSITY	PITTSBURGH PENNSYLVANIA	82	07-83	0	MG	65,961	101,690
5	R01 GM28926-03 21800	RILEY, MONICA EVOLUTION OF THE BACTERIAL GENOME	STATE UNIVERSITY NEW YORK STONY BROOK	STONY BROOK NEW YORK	82	07-83	0	MG	63,915	94,599
5	R01 GM28946-02 21750	DAS, ASIS K GENE REGULATION BY TRANSCRIPTION ANTITERMINATION	UNIVERSITY OF CONNECTICUT HEALTH CENTER	FARMINGTON CONNECTICUT	82	03-83	1	MG	57,080	81,866
5	R01 GM28988-02 21250	WALKER, GRAHAM C CELLULAR RESPONSES TO DNA DAMAGE	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	CAMBRIDGE MASSACHUSETTS	82	03-83	3	MG	61,280	97,492
5	R01 GM29025-02 22500	GREENBERG, G ROBERT ROLE OF RIBONUCLEOTIDE REDUCTASE IN DNA REPLICATION	UNIVERSITY OF MICHIGAN AT ANN ARBOR	ANN ARBOR MICHIGAN	82	03-83	3	MG	60,240	93,750
5	R01 GM29049-02 21750	SUSSKIND, MIRIAM M FINE-STRUCTURE GENETIC ANALYSIS OF A STRONG PROMOTER	UNIVERSITY OF MASSACHUSETTS MEDICAL SCH	WORCESTER MASSACHUSETTS	82	03-83	2	MG	57,508	96,364
5	R01 GM29053-02 22300	ROCK, CHARLES O REGULATORY SITES IN MEMBRANE LIPID BIOSYNTHESIS	ST. JUDE CHILDREN'S RESEARCH HOSPITAL	MEMPHIS TENNESSEE	82	03-83	1	MG	64,894	89,408
5	R01 GM29067-02 21780	CASADABAN, MALCOLM J GENE FUSION AND THE STUDY OF DNA TRANSPOSITION	UNIVERSITY OF CHICAGO	CHICAGO ILLINOIS	82	03-83	0	MG	49,957	77,292
5	R01 GM29085-02 21750	FIGURSKI, DAVID H GENE REGULATION IN BROAD HOST RANGE PLASMIDS	COLUMBIA UNIVERSITY	NEW YORK NEW YORK	82	03-83	1	MG	61,768	103,523

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5	R01 GM29086-02 21480	FINNERTY, WILLIAM R GENETICS OF ALKANE UTILIZATION IN ACINETOBACTER	UNIVERSITY OF GEORGIA	ATHENS GEORGIA	82	02-83	1	MG	42,521	58,551
5	R01 GM29100-02 21750	RODRIGUEZ, RAYMOND L DNA SEQUENCES CONTROLLING GENE EXPRESSION	UNIVERSITY OF CALIFORNIA DAVIS	DAVIS CALIFORNIA	82	03-83	1	MG	75,564	97,295
5	R01 GM29152-02 21750	WILD, JAMES R ORGANIZATION AND REGULATION OF THE ATCASE CISTRONS	TEXAS AGRI AND MECH UNIV	COLLEGE STATION COLLEGE STATION TEXAS	82	05-83	1	MG	36,919	47,626
5	R01 GM29158-02 21100	VON HIPPEL, PETER H MOLECULAR INTERACTION IN T4 DNA REPLICATION COMPLEX	UNIVERSITY OF OREGON	EUGENE OREGON	82	03-83	3	MG	72,060	97,223
5	R01 GM29231-03 21320	VOLD, BARBARA S ROLE OF TRNA IN CELLULAR REGULATORY MECHANISMS	SRI INTERNATIONAL	MENLO PARK CALIFORNIA	82	08-83	3	MG	81,984	161,721
5	R01 GM29456-02 21750	GUNSALUS, ROBERT P INTERACTION OF TRP REPRESSOR WITH TRP OPERATOR DNA	UNIVERSITY OF CALIFORNIA LOS ANGELES	LOS ANGELES CALIFORNIA	82	08-83	1	MG	55,612	77,134
5	R01 GM29466-02 21750	TURNBOUGH, CHARLES L, JR REGULATION OF PYRIMIDINE GENE EXPRESSION IN BACTERIA	UNIVERSITY OF ALABAMA IN	BIRMINGHAM ALABAMA	82	07-83	1	MG	50,638	68,265
5	R01 GM29535-02 21200	WECHSLER, JAMES A CONTROL OF NORMAL AND ABNORMAL CHROMOSOME GROWTH	PUBLIC HLTH RES INST OF THE CITY OF NY	NEW YORK NEW YORK	82	12-82	1	MG	86,376	123,103
5	R01 GM29558-02 21200	MC ENTEE, KEVIN BIOCHEMISTRY OF RECA PROTEIN STRUCTURE, FUNCTION/CONTROL	UNIVERSITY OF CALIFORNIA LOS ANGELES	LOS ANGELES CALIFORNIA	82	06-83	1	MG	75,705	102,112
1	R01 GM29627-01 21750	WANNER, BARRY L PHOSPHATE CONTROLLED GENE EXPRESSION IN E COLI	EMORY UNIVERSITY	ATLANTA GEORGIA	82	12-82	2	MG	75,715	103,573
5	R01 GM29721-02 21750	LACKS, SANFORD A DNA METHYLATION AND THE REGULATION OF GENE FUNCTION	ASSOCIATED UNIV-BROOKHAVEN NATL LAB	UPTON NEW YORK	82	06-83	3	MG	61,285	98,056
5	R01 GM29764-02 21750	LUTKENHAUS, JOSEPH F REGULATION OF EXPRESSION OF CELL DIVISION GENES	UNIVERSITY OF KANSAS COL HLTH SCI & HOSP	KANSAS CITY KANSAS	82	06-83	1	MG	62,228	83,012

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3	R01 GM29851-02S1 21750	OESCHGER, MAX P TS NONSENSE SUPPRESSORS OF E. COLI K-12	JOHNS HOPKINS UNIVERSITY	BALTIMORE MARYLAND	82	06-83	0	MG		22,751	34,127
1	R01 GM29928-01 21600	BRUENN, JEREMY A RELATEDNESS OF USTILAGE MAYDIS VIRAL DOUBLE-STRANDED RNA	STATE UNIVERSITY OF NEW YORK AT BUFFALO	BUFFALO NEW YORK	82	01-83	2	MG		44,100	55,712
1	R01 GM29988-01 21200	PTASHNE, MARK CARCINOGENS AND THE SOS RESPONSE	HARVARD UNIVERSITY	CAMBRIDGE MASSACHUSETTS	82	07-83	2	MG		93,941	135,445
1	R01 GM30077-01 21200	HAYES, SIDNEY ANALYSIS OF THE LAMBDA REPLICATOR	UNIVERSITY OF SASKATCHEWAN	SASKATOON CANADA	82	01-83	2	MG		66,230	66,230
1	R01 GM30191-01 21200	SPICER, ELEANOR K STRUCTURE AND EXPRESSION OF T4 DNA REPLICATION GENES	YALE UNIVERSITY	NEW HAVEN CONNECTICUT	82	03-83	2	MG		45,500	71,890
1	R01 GM30330-01 21250	MARIMUS, MARTIN G RELATIONSHIP OF THE DAM GENE AND DNA ADENINE METHYLASE	UNIVERSITY OF MASSACHUSETTS MEDICAL SCH	WORCESTER MASSACHUSETTS	82	03-83	2	MG		61,890	101,468
5	R01 GM30375-02 21310	MC CLURE, WILLIAM R MECHANISM AND REGULATION OF E COLI RNA POLYMERASE	CARNEGIE-MELLON UNIVERSITY	PITTSBURGH PENNSYLVANIA	82	06-83	2	MG		59,430	88,487
3	R01 GM30375-02S1 21310	MC CLURE, WILLIAM R MECHANISM AND REGULATION OF E COLI RNA POLYMERASE	CARNEGIE-MELLON UNIVERSITY	PITTSBURGH PENNSYLVANIA	82	06-83	2	MG		35,851	55,569
1	R01 GM30408-01 AI 21310	SONENSHEIN, ABRAHAM L INITIATION OF RNA SYNTHESIS	TUFTS UNIVERSITY	BOSTON MASSACHUSETTS	82	04-83	2	MG		53,874	83,835
1	R01 GM30435-01 21200	TESSMAN, ETHEL S DNA REPLICATION IN E. COLI	PURDUE UNIVERSITY WEST LAFAYETTE	WEST LAFAYETTE INDIANA	82	07-83	2	MG		67,346	93,884
1	R01 GM30488-01 AI 21200	RADDING, CHARLES M BACTERIOPHAGE RECOMBINATION PROTEINS	YALE UNIVERSITY	NEW HAVEN CONNECTICUT	82	05-83	2	MG		46,928	71,536
1	R01 GM30491-01 21750	WILCOX, GARY L BIOCHEMICAL GENETICS OF BACTERIAL PLANT PATHOGENS	UNIVERSITY OF CALIFORNIA LOS ANGELES	LOS ANGELES CALIFORNIA	82	04-83	2	MG		65,754	83,098

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1	R01 GM30549-01 AI 22400	SILVERMAN, PHILIP ISOLEUCINE AND VALINE SYNTHESIS IN CPX MUTANTS OF E COLI	YESHIVA UNIVERSITY	NEW YORK NEW YORK	82	04-83	2	MG	64,978	116,318
1	R01 GM30590-01 21250	BEATTIE, KENNETH L THE ENZYMOLOGY OF MUTAGENESIS	BAYLOR COLLEGE OF MEDICINE	HOUSTON TEXAS	82	04-83	4	MG	62,202	81,535
1	R01 GM30649-01 21250	SHORTLE, DAVID R SITE/SPECIFIC MUTAGENESIS OF CLONED GENES	STATE UNIVERSITY NEW YORK STONY BROOK	STONY BROOK NEW YORK	82	04-83	2	MG	56,915	78,527
1	R01 GM30709-01 AI 21750	SADLER, JOHN R DETERMINANTS OF SPECIFICITY IN THE LACTOSE REPRESSOR	UNIVERSITY OF COLORADO HLTH SCIENCES CTR	DENVER COLORADO	82	04-83	2	MG	71,091	88,298
1	R01 GM30800-01 21320	MILLER, DAVID L STRUCTURE & FUNCTION OF PEPTIDE CHAIN ELONGATION FACTOR	INSTITUTE FOR BASIC RES IN DEV DISABIL	NEW YORK NEW YORK	82	08-83	3	MG	65,576	89,885
1	R01 GM30894-01 21100	TAKEDA, YOSHINORI STUDY ON CRO REPRESSOR--OPERATOR INTERACTION	UNIVERSITY OF MARYLAND BALT CO CAMPUS	CATONSVILLE MARYLAND	82	06-83	2	MG	58,848	68,548
1	R01 GM30896-01 21750	WILCOX, GARY L MOLECULAR BASIS OF CONTROL IN THE L-ARABINOSE OPERON	UNIVERSITY OF CALIFORNIA LOS ANGELES	LOS ANGELES CALIFORNIA	82	07-83	4	MG	80,000	109,838
1	R01 GM30962-01 21700	LONG, SHARON R EARLY GENE EXPRESSION IN THE RHIZOBIUM-LEGUME SYMBIOSIS	STANFORD UNIVERSITY	STANFORD CALIFORNIA	82	06-83	2	MG	82,038	115,120
1	R01 GM31082-01 21250	AZIZ, SANCAR STRUCTURE AND REGULATION OF E. COLI DNA PHOTOLYASE	UNIVERSITY OF NORTH CAROLINA CHAPEL HILL	CHAPEL HILL NORTH CAROLINA	82	07-83	2	MG	98,609	124,740
1	R01 GM31114-01 AM 21320	VOURNAKIS, JOHN N SECONDARY STRUCTURE AND PROCESSING OF PROKARYOTIC RNA	SYRACUSE UNIVERSITY AT SYRACUSE	SYRACUSE NEW YORK	82	06-83	2	MG	45,249	70,191
1	R01 GM31139-01 21250	PTASHNE, MARK DNA-PROTEIN BINDING AND SITE-SPECIFIC MUTAGENESIS	HARVARD UNIVERSITY	CAMBRIDGE MASSACHUSETTS	82	06-83	2	MG	51,534	91,811
1	R01 GM31196-01 21200	MEYER, RALPH R E. COLI MUTANT DNA BINDING PROTEINS AND DNA METABOLISM	UNIVERSITY OF CINCINNATI	CINCINNATI OHIO	82	08-83	2	MG	63,067	84,176

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7	R01 GM31657-01 21200	COZZARELLI, NICHOLAS R ENZYMOLOGICAL AND GENETIC STUDIES OF DNA POLYMERASES	UNIVERSITY OF CALIFORNIA	BERKELEY BERKELEY CALIFORNIA	82	06-83	2	MG		91,378	129,665
1	R01 GM31685-01 21200	KHAN, SALEEM A PLASMID PT181 DNA REPLICATION IN STAPHYLOCOCCUS AUREUS	UNIVERSITY OF PITTSBURGH	PITTSBURGH PENNSYLVANIA	82	06-83	2	MG		73,501	105,812
1	R01 GM31788-01 21250	BHANOT, OPINDER S MOLECULAR MECHANISMS OF MUTATIONS BY AP-SITE	PUBLIC HLTH RES INST OF THE CITY OF NY	NEW YORK NEW YORK	82	07-83	2	MG		90,088	125,675
***	0	* CENTERS								0	0
***	139	NONCENTERS								10,044,121	14,434,133
***	139	TOTAL								10,044,121	14,434,133
5	R01 GM06983-23 21250	DE MARS, ROBERT I GENETIC STUDIES WITH CULTIVATED MAMMALIAN CELLS	UNIVERSITY OF WISCONSIN	MADISON MADISON WISCONSIN	82	04-83	0	MGN		117,682	165,588
5	R01 GM09966-21 21480	RUDDLE, FRANK H GENETIC ANALYSIS OF SOMATIC CELL POPULATIONS	YALE UNIVERSITY	NEW HAVEN CONNECTICUT	82	08-83	2	MGN		336,861	563,886
2	R01 GM18684-11 21480	TAYLOR, BENJAMIN A GENETIC ANALYSIS OF COMPLEX INFIRMITIES	JACKSON LABORATORY	BAR HARBOR MAINE	82	06-83	4	MGN		122,588	164,907
2	R01 GM18835-12 21750	SCHEFFLER, IMMO E GENETICS AND BIOCHEMISTRY OF MAMMALIAN CELLS IN CULTURE	UNIVERSITY OF CALIFORNIA	SAN DIEGO LA JOLLA CALIFORNIA	82	08-83	4	MGN		86,650	105,038
2	R01 GM19656-11 21480	RODERICK, THOMAS H STUDY OF MAMMALIAN CHROMOSOMAL INVERSIONS	JACKSON LABORATORY	BAR HARBOR MAINE	82	08-83	4	MGN		69,526	91,657

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5	R01 GM20454-10 21480	SHOWS, THOMAS B HUMAN GENE LINKAGE RELATIONSHIPS IN CELL HYBRIDS	ROSWELL PARK MEMORIAL INSTITUTE	BUFFALO NEW YORK	82	07-83	3	MGN	155,894	226,490
5	R01 GM20483-09 21600	CEDAR, HOWARD TRANSCRIPTION AND MODIFICATION OF CHROMATIN DNA	HEBREW UNIVERSITY OF JERUSALEM	JERUSALEM ISRAEL	82	05-83	0	MGN	67,302	67,302
5	R01 GM20608-08 21600	CHU, ERNEST H GENETIC CONTROL OF MAMMALIAN CELL METABOLISM	UNIVERSITY OF MICHIGAN AT ANN ARBOR	ANN ARBOR MICHIGAN	82	11-82	2	MGN	55,684	87,981
2	R01 GM20919-09 21600	EICHER, EVA M CYTOGENETICS OF THE MOUSE	JACKSON LABORATORY	BAR HARBOR MAINE	82	06-83	4	MGN	156,955	227,942
2	R01 GM21168-09 21750	CAPECCHI, MARIO R THE CONTROL, ASSEMBLY AND TERMINATION OF PROTEINS	UNIVERSITY OF UTAH	SALT LAKE CITY UTAH	82	11-82	4	MGN	120,562	165,572
5	R01 GM21305-08 21600	WANG, RICHARD J MITOSIS AND MITOTIC ARREST IN MAMMALIAN CELLS	UNIVERSITY OF MISSOURI COLUMBIA	COLUMBIA MISSOURI	82	05-83	0	MGN	64,330	87,167
5	R01 GM21313-08 21600	EDGELL, MARSHALL H EUKARYOTIC GENE ORGANIZATION	UNIVERSITY OF NORTH CAROLINA CHAPEL HILL	CHAPEL HILL NORTH CAROLINA	82	11-82	0	MGN	124,860	172,676
5	R01 GM21509-08 21800	WILSON, ALLAN C REGULATION AS A BASIS FOR ORGANISMAL DIFFERENCES	UNIVERSITY OF CALIFORNIA BERKELEY	BERKELEY CALIFORNIA	82	11-82	2	MGN	105,745	138,526
5	R01 GM21812-08 21200	BLATTNER, FREDERICK R REGULATORY SITES IN PRO- AND EUKARYOTIC GENOMES	UNIVERSITY OF WISCONSIN MADISON	MADISON WISCONSIN	82	01-83	2	MGN	171,290	239,206
5	R01 GM21873-08 21280	EISENSTADT, JEROME M CYTOPLASMIC INHERITANCE IN CULTURED MAMMALIAN CELLS	YALE UNIVERSITY	NEW HAVEN CONNECTICUT	82	01-83	2	MGN	139,690	220,710
5	R01 GM22629-08 21480	CHASIN, LAWRENCE A FINE STRUCTURE MAPPING OF MUTATIONS IN MAMMALIAN CELLS	COLUMBIA UNIVERSITY	NEW YORK NEW YORK	82	08-83	1	MGN	111,260	188,808
5	R01 GM22878-07 21700	BAILEY, DONALD W GENETIC STABILITY OF MOUSE ZYGOTES IN FROZEN STORAGE	JACKSON LABORATORY	BAR HARBOR MAINE	82	03-83	3	MGN	92,033	129,099

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2	R01 GM23013-05A1 21320	ROUFA, DONALD J GENETICS OF THE MAMMALIAN 80S RIBOSOME	KANSAS STATE UNIVERSITY	MANHATTAN	KANSAS	82	07-83	2	MGN		65,750	85,939
5	R01 GM23047-07 21800	MOSES, MONTROSE J CHROMOSOME ANALYSIS IN LEMURIFORM PRIMATES	DUKE UNIVERSITY	DURHAM	NORTH CAROLINA	82	06-83	0	MGN		54,918	82,377
2	R01 GM23073-07 21480	RYDER, OLIVER A COMPARATIVE MOLECULAR CYTOGENETICS	ZOOLOGICAL SOCIETY OF SAN DIEGO	SAN DIEGO	CALIFORNIA	82	07-83	2	MGN		83,747	99,887
2	R01 GM23200-07 21400	CARSON, DENNIS A ADENOSINE DEAMINASE DEFICIENCY: GENETICS AND IMMUNOLOGY	SCRIPPS CLINIC AND RESEARCH FOUNDATION	LA JOLLA	CALIFORNIA	82	06-83	4	MGN		88,432	145,824
2	R01 GM23618-06 13700	COLLINS, ROBERT L LATERALIZATION OF FUNCTION: BEHAVIOR GENETIC ANALYSIS	JACKSON LABORATORY	BAR HARBOR	MAINE	82	07-83	2	MGN		84,620	128,508
5	R01 GM23905-06 21600	HOLMQUIST, GERALD P G-BANDING MECHANISMS IN MAMMALIAN CHROMOSOMES	BAYLOR COLLEGE OF MEDICINE	HOUSTON	TEXAS	82	06-83	2	MGN		75,013	100,739
2	R01 GM24125-06 21800	CHAPMAN, VERNE M REGULATION OF X-CHROMOSOME DIFFERENTIATION IN MAMMALS	ROSWELL PARK MEMORIAL INSTITUTE	BUFFALO	NEW YORK	82	07-83	2	MGN		92,770	126,775
5	R01 GM24265-05 21480	ELLIOTT, ROSEMARY W MAPPING MOUSE GENES USING 2-D ELECTROPHORESIS	ROSWELL PARK MEMORIAL INSTITUTE	BUFFALO	NEW YORK	82	08-83	1	MGN		38,879	53,679
5	R01 GM24285-06 21280	WALLACE, DOUGLAS C MITOCHONDRIAL GENETICS AND NEOPLASTIC TRANSFORMATION	STANFORD UNIVERSITY	STANFORD	CALIFORNIA	82	08-83	0	MGN		72,349	122,270
2	R01 GM24309-06 21480	EPSTEIN, CHARLES J MOLECULAR EFFECTS OF CHROMOSMAL ANEUPLOIDY	UNIVERSITY OF CALIFORNIA SAN FRANCISCO	SAN FRANCISCO	CALIFORNIA	82	07-83	4	MGN		97,979	125,119
5	R01 GM24375-06 22200	SHIMIZU, NOBUYOSHI GENETIC CONTROL OF MAMMALIAN CELL SURFACE FUNCTIONS	UNIVERSITY OF ARIZONA	TUCSON	ARIZONA	82	06-83	2	MGN		72,368	100,007
5	R01 GM24736-05 21400	MURPHY, EDMOND A THEORETICAL ASPECTS OF CLINICAL GENETICS	JOHNS HOPKINS UNIVERSITY	BALTIMORE	MARYLAND	82	12-82	1	MGN		78,390	114,835

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2	R01 GM24778-04A1 21200	FARBER, ROSANN A GENETIC STUDIES ON MUTATION IN NEAR-DIPLOID CELLS	UNIVERSITY OF CHICAGO	CHICAGO ILLINOIS	82	08-83	2	MGN	60,000	98,744
5	R01 GM24872-06 21320	MEISLER, MIRIAM H GENETIC REGULATION OF MOUSE ENZYMES	UNIVERSITY OF MICHIGAN AT ANN ARBOR	ANN ARBOR MICHIGAN	82	05-83	3	MGN	72,133	113,970
5	R01 GM25193-05 21480	MILLER, ORLANDO J ANTIBODY PROBES OF CHROMOSOME STRUCTURE	COLUMBIA UNIVERSITY	NEW YORK NEW YORK	82	03-83	1	MGN	81,787	137,075
2	R01 GM25339-04 21480	WASMUTH, JOHN J GENETIC MAPPING AND CLONING MAMMALIAN GENES	UNIVERSITY OF CALIFORNIA IRVINE	IRVINE CALIFORNIA	82	11-82	2	MGN	65,170	83,203
5	R01 GM25728-04 22300	STADLER, JOAN K MUTANTS OF MEMBRANE FUNCTION IN MAMMALIAN CELLS	IOWA STATE UNIVERSITY OF SCIENCE & TECH	AMES IOWA	82	11-82	1	MGN	50,450	62,304
2	R01 GM25902-04 21700	WEISSMAN, IRVING L HISTOCOMPATIBILITY AND ALLORECOGNITION IN TUNICATES	STANFORD UNIVERSITY	STANFORD CALIFORNIA	82	07-83	2	MGN	76,152	118,696
2	R01 GM26028-04 AM 21600	VILLA-KOMAROFF, LYDIA THE STRUCTURE OF GENES ENCODING INSULIN-LIKE PEPTIDES	UNIVERSITY OF MASSACHUSETTS MEDICAL SCH	WORCESTER MASSACHUSETTS	82	11-82	2	MGN	69,560	113,982
2	R01 GM26105-05 HD 21480	FRANCKE, UTA INTRACHROMOSOMAL GENE MAPPING	YALE UNIVERSITY	NEW HAVEN CONNECTICUT	82	06-83	4	MGN	104,500	171,480
2	R01 GM26414-04 11780	WILSON, CAROL M THE GENETIC CONTROL OF RENIN ACTIVITY	UNIVERSITY OF TEXAS HLTH SCI CTR DALLAS	DALLAS TEXAS	82	03-83	2	MGN	75,374	101,404
2	R01 GM26449-04 CA 21480	FOURNIER, RAYMOND E GENETIC ANALYSIS OF CELL-TYPE-SPECIFIC FUNCTIONS	UNIVERSITY OF SOUTHERN CALIFORNIA	LOS ANGELES CALIFORNIA	82	03-83	2	MGN	93,769	133,609
2	R01 GM26463-04 21400	BERGER, NATHAN A POLY(ADPR) IN GENETIC DISORDERS OF DNA REPAIR	JEWISH HOSPITAL OF ST. LOUIS	SAINT LOUIS MISSOURI	82	03-83	4	MGN	147,388	190,402
5	R01 GM26522-04 21480	CHAN, TEH-SHENG SOMATIC CELL HYBRIDS FOR STUDIES OF HUMAN DISEASES	UNIVERSITY OF TEXAS MED BR GALVESTON	GALVESTON TEXAS	82	11-82	1	MGN	60,474	81,290

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5	R01 GM26631-03 21480	KAO, FA-TEN CELL HYBRIDS CONTAINING SINGLE HUMAN CHROMOSOMES	UNIVERSITY OF COLORADO HLTH SCIENCES CTR	DENVER COLORADO	82	06-83	0	MGN 90,098	113,614
5	R01 GM26659-03 21480	CONNEALLY, P MICHAEL GENETIC LINKAGE STUDIES OF HUNTINGTON'S DISEASE	INDIANA UNIV-PURDUE UNIV AT INDIANAPOLIS	INDIANAPOLIS INDIANA	82	12-82	2	MGN 57,436	82,708
2	R01 GM26939-04 21750	MARCU, KENNETH B REGULATION OF EXPRESSION OF EUKARYOTIC GENE FAMILIES	STATE UNIVERSITY NEW YORK STONY BROOK	STONY BROOK NEW YORK	82	06-83	2	MGN 61,916	90,747
5	R01 GM27014-03 21800	GREENBAUM, IRA F CHROMOSOMAL REARRANGEMENT INCORPORATION IN MAMMALS	TEXAS AGRI AND MECH UNIV	COLLEGE STATION TEXAS	82	02-83	0	MGN 45,783	58,480
5	R01 GM27018-06 21400	HARRIS, HARRY INHERITED HUMAN ENZYME DIVERSITY	UNIVERSITY OF PENNSYLVANIA	PHILADELPHIA PENNSYLVANIA	82	02-83	2	MGN 91,697	151,300
5	R01 GM27096-03 21480	USHER, DAVID C REGULATION OF TWO GENES LINKED TO AN IGK CHAIN GENE	UNIVERSITY OF DELAWARE	NEWARK DELAWARE	82	12-82	0	MGN 49,518	76,498
5	R01 GM27102-03 21480	DAVISSON, MURIEL T ROBERTSONIAN CHROMOSOMES OF THE MOUSE	JACKSON LABORATORY	BAR HARBOR MAINE	82	04-83	0	MGN 69,267	105,828
5	R01 GM27115-03 21480	VONDER HAAR, RAYMOND A FRAMESHIFT MUTANTS AND SUPPRESSORS IN MAMMALIAN CELLS	TEXAS AGRI AND MECH UNIV	COLLEGE STATION TEXAS	82	12-82	0	MGN 23,092	29,789
5	R01 GM27250-27 21700	GLUECKSOHN-WAELSCH, SALOME GENETIC CONTROL OF MAMMALIAN DIFFERENTIATION	YESHIVA UNIVERSITY	NEW YORK NEW YORK	82	03-83	0	MGN 129,285	240,470
5	R01 GM27268-03 21480	MORROW, KENNETH J, JR REGULATORY MUTATIONS AFFECTING HPRT SYNTHESIS	TEXAS TECH UNIVERSITY	LUBBOCK TEXAS	82	11-82	0	MGN 21,464	27,903
5	R01 GM27270-03 21800	GILLESPIE, DAVID H STRUCTURE AND FUNCTION OF REPEATED DNA IN PRIMATES	HAHNEMANN MED COL & HOSP OF PHILADELPHIA	PHILADELPHIA PENNSYLVANIA	82	12-82	0	MGN 80,528	126,038
5	R01 GM27593-02 21750	BEAUDET, ARTHUR L REGULATION OF ARGININOSUCCINATE SYNTHETASE	BAYLOR COLLEGE OF MEDICINE	HOUSTON TEXAS	82	03-83	1	MGN 77,561	105,123

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5	R01 GM27707-03 21320	DANIEL, WILLIAM L GENETIC ANALYSIS OF ARYLSULFATASE B VARIATION	UNIVERSITY OF ILLINOIS	URBANA-CHAMPAIGN URBANA	82 ILLINOIS	03-83	0	MGN		20,151	28,695
5	R01 GM27754-03 21750	WAHL, GEOFFREY M DRUG RESISTANCE AND GENE AMPLIFICATION IN EUKARYOTES	SALK INSTITUTE FOR BIOLOGICAL STUDIES	LA JOLLA	82 CALIFORNIA	03-83	0	MGN		75,412	122,167
5	R01 GM27882-03 21480	HOUSMAN, DAVID E GENETIC STRUCTURE AND FUNCTION OF HUMAN CHROMOSOME II	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	CAMBRIDGE	82 MASSACHUSETTS	03-83	0	MGN		51,629	81,909
5	R01 GM27965-03 21800	HAMILTON, ANDREW E SIGNIFICANCE OF CENTRIC FUSION IN LEMUR EVOLUTION	TULANE UNIVERSITY OF LOUISIANA	NEW ORLEANS	82 LOUISIANA	06-83	0	MGN		41,496	60,999
5	R01 GM28017-03 21750	EGOROV, IGOR K MUTATIONS OF CMAD LOCI IN MOUSE CHROMOSOME 17	JACKSON LABORATORY	BAR HARBOR	82 MAINE	08-83	0	MGN		156,215	226,236
5	R01 GM28067-02 21400	SUAREZ, BRIAN K GENETIC TRANSMISSION OF VARIANT ANTITRYPSIN ALLELES	WASHINGTON UNIVERSITY	SAINT LOUIS	81 MISSOURI	06-83	0	MGN		65,181	87,369
5	R01 GM28147-03 21280	LANSMAN, ROBERT A A GENETIC ANALYSIS OF MAMMALIAN MITOCHONDRIAL DNA	UNIVERSITY OF GEORGIA	ATHENS	82 GEORGIA	11-82	0	MGN		57,846	78,532
5	R01 GM28223-03 21400	FRIEDMANN, THEODORE STUDIES OF MAMMALIAN HGPRT GENES	UNIVERSITY OF CALIFORNIA	SAN DIEGO LA JOLLA	82 CALIFORNIA	07-83	0	MGN		124,990	166,362
5	R01 GM28241-03 21320	BENJAMIN, DAVID C PROTEIN FOLDING: IMMUNOCHEMICAL AND GENETIC ANALYSES	UNIVERSITY OF VIRGINIA	CHARLOTTESVILLE CHARLOTTESVILLE	82 VIRGINIA	07-83	2	MGN		62,810	91,075
5	R01 GM28310-03 11770	BOURNE, HENRY R SOMATIC GENETIC ANALYSIS OF ADENYLATE CYCLASE	UNIVERSITY OF CALIFORNIA	SAN FRANCISCO SAN FRANCISCO	82 CALIFORNIA	06-83	0	MGN		59,376	75,615
5	R01 GM28464-02 21480	ELLIOTT, ROSEMARY W DETECTING AND MAPPING SEQUENCE CHANGES IN MOUSE DNA	NEW YORK STATE DEPARTMENT OF HEALTH	ALBANY	82 NEW YORK	11-82	3	MGN		77,710	107,770
5	R01 GM28573-02 21600	KUO, MACUS T CHROMOSOME STRUCTURE AND GENE ARRANGEMENT	UNIVERSITY OF TEXAS SYSTEM CANCER CENTER	HOUSTON	82 TEXAS	01-83	1	MGN		77,496	107,332

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5	R01 GM28574-02 21800	CHAKRABORTY, RANAJIT EVOLUTIONARY DYNAMICS OF COMPLEX GENETIC TRAITS	UNIVERSITY OF TEXAS HLTH SCI CTR HOUSTON	HOUSTON	TEXAS	82	11-82	0	MGN	13,750	18,975
1	R01 GM28632-01A1 21600	ARNHEIM, NORMAN STRUCTURE OF AN UNUSUAL MOUSE INTERSPERSED DNA SEQUENCE	STATE UNIVERSITY NEW YORK STONY BROOK	STONY BROOK	NEW YORK	82	08-83	2	MGN	64,047	92,815
5	R01 GM28672-02 21800	YOKOYAMA, SHOZO POPULATION GENETICS OF DELETERIOUS GENES	WASHINGTON UNIVERSITY	SAINT LOUIS	MISSOURI	82	12-82	1	MGN	26,270	40,719
5	R01 GM28710-02 21280	HOWELL, NEIL MITOCHONDRIAL GENETICS OF MAMMALIAN CELLS	SIDNEY FARBER CANCER INSTITUTE	BOSTON	MASSACHUSETTS	82	12-82	1	MGN	53,954	87,533
5	R01 GM28719-03 21400	RAO, DABEERU C PATH ANALYSIS OF FAMILY RESEMBLANCE	WASHINGTON UNIVERSITY	SAINT LOUIS	MISSOURI	82	06-83	2	MGN	66,988	103,831
5	R01 GM28762-03 21400	HIRSCHHORN, KURT STUDIES OF INHERITED STORAGE DISEASES IN CELL CULTURE	MOUNT SINAI SCHOOL OF MEDICINE	NEW YORK	NEW YORK	82	07-83	0	MGN	134,611	200,570
5	R01 GM28838-03 21750	PACKMAN, SEYMOUR COPPER METABOLISM IN THE MOTTLED MOUSE	UNIVERSITY OF CALIFORNIA SAN FRANCISCO	SAN FRANCISCO	CALIFORNIA	82	07-83	0	MGN	79,487	101,505
5	R01 GM28840-03 21400	ADAMS, SHERRILL L ANALYSIS OF HUMAN COLLAGEN GENE EXPRESSION	UNIVERSITY OF PENNSYLVANIA	PHILADELPHIA	PENNSYLVANIA	82	07-83	0	MGN	62,875	102,922
5	R01 GM28931-02 21480	SCOTT, ALAN F GLOBIN GENE REGULATION IN NON-HUMAN PRIMATES	JOHNS HOPKINS UNIVERSITY	BALTIMORE	MARYLAND	82	03-83	1	MGN	74,869	111,454
5	R01 GM29033-02 21400	LISKAY, ROBERT M MOLECULAR GENETIC STUDY OF X CHROMOSOME INACTIVATION	YALE UNIVERSITY	NEW HAVEN	CONNECTICUT	82	03-83	1	MGN	51,553	81,454
1	R01 GM29110-01A1 21600	DETKE, SIEGFRIED IDENTIFYING THE PROTEINS REGULATING THE X CHROMOSOMES	UNIVERSITY OF HLTH SCI/CHICAGO MED SCH	NORTH CHICAGO	ILLINOIS	82	08-83	1	MGN	100,314	166,526
5	R01 GM29177-02 21480	FALK, CATHERINE T LINKAGE AND ASSOCIATION OF GENETIC MARKERS AND DISEASE	NEW YORK BLOOD CENTER	NEW YORK	NEW YORK	82	03-83	1	MGN	69,375	96,225

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5	R01 GM29216-03 21200	MISHRA, NAWIN C CHARACTERIZATION OF MAMMALIAN DNA POLYMERASE MUTANTS	UNIVERSITY OF SOUTH CAROLINA AT COLUMBIA	COLUMBIA SOUTH CAROLINA	82	08-83	0	MGN	47,965	69,597
5	R01 GM29249-03 21480	VANDEBERG, JOHN L ISOZYME GENETICS OF MAMMALS AND BIRDS	SOUTHWEST FOUNDATION FOR RESEARCH & EDUC	SAN ANTONIO TEXAS	82	08-83	0	MGN	88,341	160,339
5	R01 GM29361-02 21750	CALAME, KATHRYN L TRANSCRIPTION OF IMMUNOGLOBULIN HEAVY CHAIN GENES	UNIVERSITY OF CALIFORNIA LOS ANGELES	LOS ANGELES CALIFORNIA	82	11-82	1	MGN	67,880	86,675
5	R01 GM29697-02 21750	LAI, EUGENE C EUCARYOTIC GENE MUTAGENESIS AND EXPRESSION	BAYLOR COLLEGE OF MEDICINE	HOUSTON TEXAS	82	06-83	1	MGN	82,020	108,847
5	R01 GM29788-03 21400	GATTI, RICHARD A MHC AND CANCER SUSCEPTIBILITY GENES IN MAN	UNIVERSITY OF CALIFORNIA LOS ANGELES	LOS ANGELES CALIFORNIA	82	08-83	0	MGN	86,467	118,962
5	R01 GM29789-02 21480	WHITE, RAYMOND L HUMAN LINKAGE MAPPING WITH DNA POLYMORPHISM	UNIVERSITY OF UTAH	SALT LAKE CITY UTAH	82	12-82	0	MGN	93,218	126,629
1	R01 GM30135-01 21400	SMOUSE, PETER E GENETIC DEMOGRAPHY OF TRIBAL POPULATIONS	UNIVERSITY OF MICHIGAN AT ANN ARBOR	ANN ARBOR MICHIGAN	82	02-83	1	MGN	44,396	70,146
1	R01 GM30140-01 21800	WEAVER, STEVEN G THE MAINTENANCE OF SEQUENCE HOMOLOGY BY GENE CONVERSION	UNIVERSITY OF ILLINOIS CHICAGO CIRCLE	CHICAGO ILLINOIS	82	01-83	2	MGN	65,048	94,753
1	R01 GM30144-01 21800	BROWN, WESLEY M EVOLUTIONARY GENETICS OF MITOCHONDRIAL DNA	UNIVERSITY OF MICHIGAN AT ANN ARBOR	ANN ARBOR MICHIGAN	82	01-83	2	MGN	111,057	148,537
1	R01 GM30180-01 21600	EDGELL, MARSHALL H SEQUENCE ELEMENTS IN THE MOUSE	UNIVERSITY OF NORTH CAROLINA CHAPEL HILL	CHAPEL HILL NORTH CAROLINA	82	01-83	2	MGN	63,480	86,400
1	R01 GM30248-01 21480	GROSS, KENNETH W ANDROGEN RESPONSIVE GENES OF MOUSE SUBMAXILLARY GLAND	ROSWELL PARK MEMORIAL INSTITUTE	BUFFALO NEW YORK	82	01-83	2	MGN	73,387	106,306
1	R01 GM30250-01 21400	EAVES, LINDON J RESOLVING POWER OF KINSHIP ANALYSIS FOR GENETIC RESEARCH	VIRGINIA COMMONWEALTH UNIVERSITY	RICHMOND VIRGINIA	82	01-83	3	MGN	14,823	21,538

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2	R01 GM30363-02 21600	JELINEK, WARREN R MOBILE DISPERSED REPEATS & THEIR RNAS IN MAMMALS	NEW YORK UNIVERSITY	NEW YORK / NEW YORK	82	07-83	2	MGN 116,367	163,497
1	R01 GM30467-01 21480	BOTSTEIN, DAVID HUMAN DNA POLYMORPHISMS FOR GENETIC MAPPING	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	CAMBRIDGE / MASSACHUSETTS	82	04-83	2	MGN 87,195	122,264
1	R01 GM30476-01 21480	DISTECHE, CHRISTINE M ISOLATION OF X- & 7-SPECIFIC DNA TO STUDY X INACTIVATION	UNIVERSITY OF WASHINGTON	SEATTLE / WASHINGTON	82	04-83	2	MGN 85,627	99,960
1	R01 GM30701-01 ES 11760	ADESNIK, MILTON B STRUCTURE AND REGULATION OF CYTOCHROME P-450 GENES	NEW YORK UNIVERSITY	NEW YORK / NEW YORK	82	01-83	2	MGN 104,919	151,028
7	R01 GM31056-01 21480	KLEBE, ROBERT J SOMATIC CELL GENETICS OF DIFFERENTIATED PHENOTYPES	UNIVERSITY OF TEXAS HLTH SCI CTR SAN ANT	SAN ANTONIO / TEXAS	81	11-82	0	MGN 9,329	9,329
1	R13 GM31095-01 GM 21600	ROEDER, ROBERT G 1982 GORDON RESEARCH CONFERENCE ON NUCLEIC ACIDS	GORDON RESEARCH CONFERENCES	KINGSTON / RHODE ISLAND	82	05-83	0	MGN 2,000	2,000
5	R01 GM31260-02 21480	DE FRANCESCO, LAURA RECOMBINATION IN MITOCHONDRIAL GENOME OF ANIMAL CELLS	CITY OF HOPE RESEARCH INSTITUTE	DUARTE / CALIFORNIA	82	11-83	0	MGN 32,365	53,435
2	R01 GM31261-02 21750	WALLACE, R BRUCE MAJOR HISTOCOMPATIBILITY COMPLEX GENE SEQUENCES	CITY OF HOPE RESEARCH INSTITUTE	DUARTE / CALIFORNIA	82	03-83	4	MGN 114,928	179,916
2	R01 GM31263-02 21600	RIGGS, ARTHUR D REGULATORY PROTEINS IN E COLI AND EUKARYOTIC CELLS	CITY OF HOPE RESEARCH INSTITUTE	DUARTE / CALIFORNIA	82	11-82	4	MGN 135,978	221,245
1	R01 GM31740-01 21400	COWAN, NICHOLAS J STRUCTURE AND EXPRESSION OF HUMAN TUBULIN GENES	NEW YORK UNIVERSITY	NEW YORK / NEW YORK	82	08-83	2	MGN 90,871	128,279
7	R01 GM32019-01 21600	ONORATO-SHOWE, LOUISE C GENE REARRANGEMENTS/THE GENERATION OF ANTIBODY DIVERSITY	CHILDREN'S HOSPITAL OF PHILADELPHIA	PHILADELPHIA / PENNSYLVANIA	82	06-83	2	MGN 32,756	43,070
***	0	* CENTERS						0	0
***	100	NONCENTERS						8,077,351	11,754,513
***	100	TOTAL						8,077,351	11,754,513

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5	R01 GM26407-03 / 13200	FINCK, A DONALD ROLE OF ENDORPHINS IN ANESTHETIC-INDUCED ANALGESIA	COLUMBIA UNIVERSITY	NEW YORK NEW YORK	82	03-83	0	NEUA	52,950	88,744
5	R01 GM26461-04 / 13700	YANG, JOSEPH C ANALGESICS IN EXPERIMENTAL AND CLINICAL PAIN	COLUMBIA UNIVERSITY	NEW YORK NEW YORK	82	06-83	0	NEUA	35,936	60,983
5	R01 GM27226-03 / 13700	BRONZINO, JOSEPH D BRAIN STEM MECHANISMS INVOLVED IN PAIN MODULATION	TRINITY COLLEGE	HARTFORD CONNECTICUT	82	12-83	0	NEUA	39,319	63,644
									0	0
***	0	* CENTERS							128,205	213,371
***	3	NONCENTERS							128,205	213,371
***	3	TOTAL								
5	R01 GM29836-02 / 22300	LESTER, H ALLEN INTRACELLULAR TRANSMITTERS, BIOPHYSICAL STUDIES	CALIFORNIA INSTITUTE OF TECHNOLOGY	PASADENA CALIFORNIA	82	03-83	1	NEUB	43,545	64,447
									0	0
***	0	* CENTERS							43,545	64,447
***	1	NONCENTERS							43,545	64,447
***	1	TOTAL								

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5	R01 GM18360-11 / 11870	TAYLOR, PALMER W / KINETICS OF DRUG MACROMOLECULE COMPLEX FORMATION	UNIVERSITY OF CALIFORNIA	SAN DIEGO / LA JOLLA / CALIFORNIA	82	12-82	2	NLS	79,016	103,201
5	R01 GM23336-06 / 13700	KAELBER, WILLIAM W / EXPERIMENTAL INVESTIGATION OF PAIN	UNIVERSITY OF IOWA	IOWA CITY / IOWA	81	05-83	0	NLS	53,257	73,495
5	R01 GM24337-06 / 11870	TAYLOR, PALMER W / PHARMACOLOGY OF MEMBRANE ASSOCIATED RECEPTORS	UNIVERSITY OF CALIFORNIA	SAN DIEGO / LA JOLLA / CALIFORNIA	82	06-83	2	NLS	53,235	70,856
***	0	* CENTERS							0	0
***	3	NONCENTERS							185,508	247,552
***	3	TOTAL							185,508	247,552
1	R13 GM00041-01 / JF 22500	MEISTER, ALTON / TWELFTH INTERNATIONAL CONGRESS OF BIOCHEMISTRY	AMERICAN SOCIETY OF BIOLOGICAL CHEMISTS	BETHESDA / MARYLAND	82	12-82	0	HS5	2,000	2,000
***	0	* CENTERS							0	0
***	1	NONCENTERS							2,000	2,000
***	1	TOTAL							2,000	2,000

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5	R01 GM26396-04 / 13420	ELWYN, DAVID H / COMPOSITION OF WEIGHT GAIN IN SURGICAL PATIENTS	COLUMBIA UNIVERSITY	NEW YORK / NEW YORK	82	07-83	0	NTH / 62,163	105,491
5	R01 GM26480-03 / 11880	RIKANS, LORA E / VITAMIN C DEFICIENCY AND MICROSOMAL ENZYMES	UNIVERSITY OF OKLAHOMA HLTH SCIENCES CTR	OKLAHOMA CITY / OKLAHOMA	82	03-83	0	NTH / 28,963	40,548
5	R01 GM29255-03 / 22400	ROEHRIG, KARLA L / HORMONAL AND DIETARY CONTROL OF ATP CITRATE LYASE	OHIO STATE UNIVERSITY	COLUMBUS / OHIO	82	08-83	0	NTH / 25,271	33,659
***	0	* CENTERS						0	0
***	3	NONCENTERS						116,397	179,698
***	3	TOTAL						116,397	179,698
1	R01 GM30838-01 / NS 12350	ROSCOE, DENNIS D / MYOELECTRIC CONTROLLER FOR ORTHOTIC/PROSTHETIC SYSTEMS	CASE WESTERN RESERVE UNIVERSITY	CLEVELAND / OHIO	82	08-83	2	ORTH / 74,243	97,569
***	0	* CENTERS						0	0
***	1	NONCENTERS						74,243	97,569
***	1	TOTAL						74,243	97,569

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5	R01 GM08963-20 22400	RAY, WILLIAM J, JR MECHANISM OF THE GROUP TRANSFER PROCESS	PURDUE UNIVERSITY WEST LAFAYETTE	WEST LAFAYETTE INDIANA	82	11-82	1	PB 95,661	141,255
5	R01 GM11741-16 22450	LOACH, PAUL A STRUCTURE AND FUNCTION OF PHOTOSYNTHETIC MEMBRANES	NORTHWESTERN UNIVERSITY	EVANSTON ILLINOIS	82	06-83	1	PB 80,750	105,849
5	R01 GM12394-19 22450	BEINERT, HELMUT COMPONENTS AND PATHWAYS IN BIOLOGICAL OXIDATIONS	UNIVERSITY OF WISCONSIN MADISON	MADISON WISCONSIN	82	08-83	1	PB 107,143	151,924
5	R01 GM13641-16 22450	SANADI, D RAO OXIDATIVE PHOSPHORYLATION IN HEART MITOCHONDRIA	BOSTON BIOMEDICAL RESEARCH INSTITUTE	BOSTON MASSACHUSETTS	82	06-83	2	PB 115,913	171,341
2	R01 GM14479-17 22450	JAGENDORF, ANDRE T MEMBRANE-ASSOCIATED PHOSPHORYLATION	CORNELL UNIVERSITY ITHACA	ITHACA NEW YORK	82	08-83	2	PB 79,702	113,124
2	R01 GM16974-13 22450	ALLISON, WILLIAM S STRUCTURAL STUDIES ON THE ENERGY TRANSDUCING ATPASE	UNIVERSITY OF CALIFORNIA SAN DIEGO	LA JOLLA CALIFORNIA	82	05-83	3	PB 81,621	106,304
3	R01 GM18528-21S1 22500	MEYER, TERRANCE E MOLECULAR BASIS FOR FUNCTION OF IRON PROTEINS	UNIVERSITY OF CALIFORNIA SAN DIEGO	LA JOLLA CALIFORNIA	82	11-82	0	PB 21,913	29,166
2	R01 GM19121-11 22450	MARGOLIASH, EMANUEL MITOCHONDRIAL MEMBRANE METABOLIC ROLE OF CYTOCHROME C	NORTHWESTERN UNIVERSITY	EVANSTON ILLINOIS	82	12-82	4	PB 211,915	272,310
5	R01 GM19301-11 22500	TAYLOR, SUSAN S PROTEIN KINASE: PRIMARY STRUCTURE AND C-AMP INTERACTION	UNIVERSITY OF CALIFORNIA SAN DIEGO	LA JOLLA CALIFORNIA	82	04-83	3	PB 103,150	134,545
2	R01 GM20199-07 11920	SCHOWEN, RICHARD L BIOLOGICAL TRANSMETHYLATION	UNIVERSITY OF KANSAS LAWRENCE	LAWRENCE KANSAS	82	11-82	2	PB 67,382	86,393
5	R01 GM20571-09 22450	MALKIN, RICHARD IRON-SULFUR PROTEINS AS BOUND ELECTRON CARRIERS	UNIVERSITY OF CALIFORNIA BERKELEY	BERKELEY CALIFORNIA	82	06-83	0	PB 47,581	65,620
5	R01 GM22070-08 22450	FISHER, RONALD R MITOCHONDRIAL PYRIDINE DINUCLEOTIDE TRANSHYDROGENASE	UNIVERSITY OF SOUTH CAROLINA AT COLUMBIA	COLUMBIA SOUTH CAROLINA	82	07-83	3	PB 82,163	118,091

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5	R01 GM22086-08 22300	NAIDER, FRED R PEPTIDE-CELL INTERACTIONS IN SACCHAROMYCES CEREVISIAE	COLLEGE OF STATEN ISLD ST. GEORGE CAMPUS	NEW YORK / NEW YORK	82	04-83	1	PB	46,516	72,882
5	R01 GM22087-08 22300	BECKER, JEFFREY M PEPTIDE-CELL INTERACTIONS IN SACCHAROMYCES CEREVISIAE	UNIVERSITY OF TENNESSEE KNOXVILLE	KNOXVILLE / TENNESSEE	82	04-83	1	PB	48,943	70,607
5	R01 GM22300-08 22400	BOLEN, DAVID W ELEMENTARY STEPS IN ENZYME CATALYSIS	SOUTHERN ILLINOIS UNIVERSITY CARBONDALE	CARBONDALE / ILLINOIS	82	08-83	1	PB	40,250	58,354
5	R01 GM22556-07 22450	YASUNOBU, KERRY T CYTOCHROME OXIDASE AND CYTOCHROME P-450 STRUCTURES	UNIVERSITY OF HAWAII AT MANOA	HONOLULU / HAWAII	82	06-83	1	PB	69,668	97,676
5	R01 GM23006-23 22450	MACKLER, BRUCE STUDIES OF BIOLOGICAL OXIDATIONS	UNIVERSITY OF WASHINGTON	SEATTLE / WASHINGTON	82	08-83	3	PB	92,598	124,081
5	R01 GM23123-25 22400	NODA, LAFAYETTE H HIGH ENERGY PHOSPHATE TRANSFERRING ENZYMES	DARTMOUTH COLLEGE	HANOVER / NEW HAMPSHIRE	82	08-83	0	PB	101,594	150,479
5	R01 GM23152-05 22450	CROSS, RICHARD L MECHANISM OF ATP SYNTHESIS BY THE RESPIRATORY CHAIN	UPSTATE MEDICAL CENTER	SYRACUSE / NEW YORK	81	06-83	1	PB	50,229	73,284
5	R01 GM23474-06 22400	MAY, SHELDON W NON-HEME IRON OXYGENASE CATALYSIS	GEORGIA INSTITUTE OF TECHNOLOGY	ATLANTA / GEORGIA	82	08-83	0	PB	80,221	122,418
5	R01 GM23858-05 22300	HOLLOWAY, PETER W THE DYNAMIC STATE OF CYTOCHROME B5 IN MEMBRANES	UNIVERSITY OF VIRGINIA CHARLOTTESVILLE	CHARLOTTESVILLE / VIRGINIA	82	12-82	3	PB	66,200	94,730
2	R01 GM23913-05A1 22400	FULCO, ARMAND J SOLUBLE CYTOCHROME P-450 HYDROXYLASES FROM BACTERIA	UNIVERSITY OF CALIFORNIA LOS ANGELES	LOS ANGELES / CALIFORNIA	82	07-83	3	PB	84,828	114,543
5	R01 GM23990-05 22300	HAYNES, DUNCAN H SARCOPLASMIC RETICULUM: CA2+ TRANSPORT AND RELEASE	UNIVERSITY OF MIAMI	MIAMI / FLORIDA	82	08-83	3	PB	68,190	113,195
5	R01 GM24195-06 22450	MALONEY, PETER C ION GRADIENTS AND ENERGY COUPLING IN BACTERIA	JOHNS HOPKINS UNIVERSITY	BALTIMORE / MARYLAND	82	07-83	0	PB	73,517	110,276

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5	R01 GM24348-04 22400	GUILLORY, RICHARD J COMPLEX I CHARACTERIZATION WITH PHOTOAFFINITY LABELS	UNIVERSITY OF HAWAII AT MANOA	HONOLULU HAWAII	82	03-83	1	PB 35,642	49,899
5	R01 GM24667-05 22400	MIDELFORT, CHRISTIAN F OXYGEN LABELING STUDIES IN ATP DEPENDENT ENZYMES	YESHIVA UNIVERSITY	NEW YORK NEW YORK	82	12-82	2	PB 57,802	106,222
5	R01 GM24689-05 22400	LIPSCOMB, JOHN D OXYGENASE ENZYME MECHANISM	UNIVERSITY OF MINNESOTA OF MNPLS-ST PAUL	MINNEAPOLIS MINNESOTA	82	12-82	1	PB 54,800	72,825
5	R01 GM24795-05 22300	ROBINSON, NEAL C HYDROPHOBIC ASSOCIATIONS OF MEMBRANE COMPLEXES	UNIVERSITY OF TEXAS HLTH SCI CTR SAN ANT	SAN ANTONIO TEXAS	82	12-82	3	PB 54,283	73,441
5	R01 GM25154-05 22400	SILVERMAN, DAVID N CATALYTIC MECHANISM OF CARBONIC ANHYDRASE	UNIVERSITY OF FLORIDA	GAINESVILLE FLORIDA	82	03-83	1	PB 70,866	102,109
2	R01 GM25347-04 22400	GILBERT, HIRAM F ENZYME CATALYSIS OF PROTON TRANSFER FROM CARBON	BAYLOR COLLEGE OF MEDICINE	HOUSTON TEXAS	82	11-82	2	PB 52,939	65,800
5	R01 GM25349-05 22450	SENIOR, ALAN E STRUCTURE OF THE PROTON-ATPASE	UNIVERSITY OF ROCHESTER	ROCHESTER NEW YORK	82	08-83	3	PB 84,449	139,341
5	R01 GM25494-05 22450	HALL, CAROLE L FATTY ACYL COA DEHYDROGENASE/ELECTRON TRANS FLAVOPROTEIN	GEORGIA INSTITUTE OF TECHNOLOGY	ATLANTA GEORGIA	82	06-83	1	PB 51,045	78,570
2	R01 GM25923-04 11760	GROVES, JOHN T MOLECULAR PROBES OF THE MECHANISM OF CYTOCHROME P-450	UNIVERSITY OF MICHIGAN AT ANN ARBOR	ANN ARBOR MICHIGAN	82	11-82	3	PB 77,579	122,575
2	R01 GM25953-04 ES 11760	TU, SHIAO-CHUN STRUCTURE AND MECHANISM OF FLAVOPROTEIN HYDROXYLASES	UNIVERSITY OF HOUSTON AT HOUSTON	HOUSTON TEXAS	82	03-83	2	PB 78,448	89,436
2	R01 GM26098-04 22450	LOACH, PAUL A MODEL SYSTEMS FOR ENERGY COUPLING IN MEMBRANES	NORTHWESTERN UNIVERSITY	EVANSTON ILLINOIS	82	06-83	4	PB 59,459	79,583
2	R01 GM26199-04 22300	CANTLEY, LEWIS C STRUCTURE AND MECHANISM OF MEMBRANE TRANSPORT SYSTEMS	HARVARD UNIVERSITY	CAMBRIDGE MASSACHUSETTS	82	03-83	4	PB 49,027	72,694

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2	R01 GM26334-04 22450	WIMMER, MARY J MECHANISMS OF ENERGY-COUPLED ATP SYNTHESIS/HYDROLYSIS	WEST VIRGINIA UNIVERSITY	MORGANTOWN	WEST VIRGINIA	82	07-83	2	PB		53,761	72,831
5	R01 GM26420-02 22450	JOSHI, SAROJ ATPASE COMPLEX: PURIFICATION AND TOPOLOGY	BOSTON BIOMEDICAL RESEARCH INSTITUTE	BOSTON	MASSACHUSETTS	82	03-83	1	PB		56,618	81,112
2	R01 GM26643-04 22400	THORPE, COLIN FLAVOPROTEINS IN FATTY ACID METABOLISM	UNIVERSITY OF DELAWARE	NEWARK	DELAWARE	82	06-83	4	PB		60,542	85,396
2	R01 GM26861-04 22300	JENNINGS, MICHAEL L BIOCHEMICAL STUDIES OF ERYTHOCYTE ANION TRANSPORT	UNIVERSITY OF IOWA	IOWA CITY	IOWA	82	06-83	4	PB		78,215	99,083
2	R01 GM26916-04 22450	FERGUSON-MILLER, SHELAGH M ORGANIZATION AND CONTROL OF ELECTRON TRANSFER CHAINS	MICHIGAN STATE UNIVERSITY	EAST LANSING	MICHIGAN	82	06-83	4	PB		66,942	90,364
5	R01 GM27171-03 22300	LANGDON, ROBERT G MECHANISM OF GLUCOSE TRANSPORT THROUGH BIOMEMBRANES	UNIVERSITY OF VIRGINIA CHARLOTTESVILLE	CHARLOTTESVILLE	VIRGINIA	82	07-83	0	PB		62,477	90,592
5	R01 GM27639-03 22400	CHURCHICH, JORGE E BRAIN PYRIDOXAL KINASE AND P-PYRIDOXINE OXIDASE	UNIVERSITY OF TENNESSEE KNOXVILLE	KNOXVILLE	TENNESSEE	82	06-83	0	PB		32,938	50,606
5	R01 GM27659-03 22400	DOOLEY, DAVID M AMINE OXIDASES:ACTIVE SITE STRUCTURE AND ROLE OF CU(II)	AMHERST COLLEGE	AMHERST	MASSACHUSETTS	82	06-83	0	PB		35,988	49,808
1	R01 GM27804-01A2 22300	BEALL, HIE PING FAST TRANSPORT KINETICS & ULTRASTRUCTURE OF THE NA+ PUMP	DUKE UNIVERSITY	DURHAM	NORTH CAROLINA	82	04-83	2	PB		68,116	101,174
5	R01 GM27860-04 21280	MATTOON, JAMES R GENETIC MODIFICATION OF MITOCHONDRIA	UNIVERSITY OF COLORADO AT COLORADO SPGS	COLORADO SPRINGS	COLORADO	82	08-83	2	PB		69,883	103,926
5	R01 GM28143-03 22400	SCHIRCH, LAVERNE G PHYSICAL AND STRUCTURAL STUDIES OF HYDROXYMETHYLASES	VIRGINIA COMMONWEALTH UNIVERSITY	RICHMOND	VIRGINIA	82	06-83	0	PB		47,964	70,114
5	R01 GM28164-03 22400	BOND, GUY H CONTROL OF NA, K-ATPASE BY VANADATE, MG, K, NA, & ATP	KIRKSVILLE COLLEGE OF OSTEOPATHIC MED	KIRKSVILLE	MISSOURI	82	08-83	0	PB		23,249	33,462

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5	R01 GM28173-03 22450	ROTTENBERG, HAGAI MEMBRANE REGULATION OF MITOCHONDRIAL METABOLISM	HAHNEMANN MED COL & HOSP OF PHILADELPHIA	PHILADELPHIA PENNSYLVANIA	82	06-83	0	PB		62,021	96,133
5	R01 GM28176-03 22400	JONES, DEAN P MECHANISMS OF HYPOXIC PATHOLOGY	EMORY UNIVERSITY	ATLANTA GEORGIA	82	06-83	0	PB		55,708	82,622
5	R01 GM28339-03 22400	FISHER, JED F CHEMICAL MECHANISMS OF REDUCTIVE METABOLISM	UNIVERSITY OF MINNESOTA OF MNPLS-ST PAUL	MINNEAPOLIS MINNESOTA	82	06-83	0	PB		36,205	50,325
5	R01 GM28342-03 11760	VATSIS, KOSTAS P CYTOCHROME P-450-B5 INTERACTIONS IN DRUG METABOLISM	NORTHWESTERN UNIVERSITY	CHICAGO ILLINOIS	82	06-83	0	PB		47,249	65,204
5	R01 GM28345-03 22400	BRADY, DONALD R SOURCE OF REDUCING EQUIVALENTS FOR OXIDATION OF STEROLS	MEMPHIS STATE UNIVERSITY	MEMPHIS TENNESSEE	82	08-83	0	PB		23,908	32,348
5	R01 GM28410-02 22500	RIGGS, AUSTEN F, II STRUCTURE OF HEMOCYANIN	UNIVERSITY OF TEXAS AUSTIN	AUSTIN TEXAS	82	12-82	3	PB		50,460	68,121
5	R01 GM28538-02 22300	CANTLEY, LEWIS C, JR MECHANISM OF CATION TRANSPORT REGULATION	HARVARD UNIVERSITY	CAMBRIDGE MASSACHUSETTS	82	01-83	1	PB		34,800	53,052
5	R01 GM28547-02 22400	SEYBERT, DAVID W CYTOCHROME P-450 CATALYZED STEROID HYDROXYLATIONS	DUQUESNE UNIVERSITY	PITTSBURGH PENNSYLVANIA	82	11-82	1	PB		39,530	61,660
1	R01 GM28673-01A1 22300	FARLEY, ROBERT A THE STRUCTURE OF (NA-K) ATPASE	UNIVERSITY OF SOUTHERN CALIFORNIA	LOS ANGELES CALIFORNIA	82	03-83	2	PB		54,476	71,547
5	R01 GM28688-02 11920	DUNAWAY-MARIANO, DEBRA INVESTIGATIONS OF PHOSPHORYL TRANSFER REACTIONS	UNIVERSITY OF MARYLAND COLLEGE PK CAMPUS	COLLEGE PARK MARYLAND	82	01-83	1	PB		52,813	74,994
5	R01 GM28703-02 22400	BOWMAN, BARRY J EUCARYOTIC H+-ATPASES OF PLASMA MEMBRANES AND VACUOLES	UNIVERSITY OF CALIFORNIA SANTA CRUZ	SANTA CRUZ CALIFORNIA	82	01-83	1	PB		78,672	98,349
5	R01 GM28704-02 22300	HACKENBROCK, CHARLES R STRUCTURAL AND FUNCTIONAL ENGINEERING OF A BIOMEMBRANE	UNIVERSITY OF NORTH CAROLINA CHAPEL HILL	CHAPEL HILL NORTH CAROLINA	82	11-82	2	PB		59,000	82,364

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5	R01 GM28737-02 11920	WHITE, RONALD E MODES OF OXYGEN ACTIVATION BY CYTOCHROME P-450	UNIVERSITY OF CONNECTICUT HEALTH CENTER	FARMINGTON CONNECTICUT	82	11-82	1	PB	47,343	68,197
5	R01 GM28767-03 22300	WEBER, HANS J ACTIVE SODIUM TRANSLOCATION IN HALOBACTERIUM HALOBIUM	UNIVERSITY OF CALIFORNIA SAN FRANCISCO	SAN FRANCISCO CALIFORNIA	82	06-83	0	PB	67,911	86,722
5	R01 GM28835-03 22300	PENNISTON, JOHN T PURIFICATION AND PROPERTIES OF CA2+ PUMPING ATPASE	MAYO FOUNDATION	ROCHESTER MINNESOTA	82	07-83	2	PB	68,278	89,476
5	R01 GM28999-02 22450	LEMASTERS, JOHN J RATE CONTROL AND THERMODYNAMICS OF OX PHOS	UNIVERSITY OF NORTH CAROLINA CHAPEL HILL	CHAPEL HILL NORTH CAROLINA	82	03-83	1	PB	37,884	52,886
5	R01 GM29035-02 11920	SEALY, ROGER C RADICAL REACTIONS OF CATECHOLS AND CATECHOLAMINES	MEDICAL COLLEGE OF WISCONSIN	MILWAUKEE WISCONSIN	82	03-83	1	PB	34,820	52,230
5	R01 GM29198-02 11920	DOLPHIN, DAVID H MYELOPEROXIDASE, SIROHEME, B12: SYNTHESIS AND FUNCTION	UNIVERSITY OF BRITISH COLUMBIA	VANCOUVER CANADA	82	06-83	1	PB	75,549	75,549
5	R01 GM29204-02 22400	KOZARICH, JOHN W MECHANISM OF GLYOXALASE I AND LACTATE RACEMASE	YALE UNIVERSITY	NEW HAVEN CONNECTICUT	82	03-83	1	PB	45,025	70,850
5	R01 GM29300-02 22300	BEELER, TROY J CA 2+ FLUXES AND POTENTIAL OF SARCOPLASMIC RETICULUM	U.S. UNIFORMED SERVICES UNIV OF HLTH SCI	BETHESDA MARYLAND	82	03-83	1	PB	13,700	13,700
5	R01 GM29344-02 22450	STANKOVICH, MARIAN T A SPECTROELECTROCHEMICAL STUDY OF SELECTED FLAVOPROTEINS	UNIVERSITY OF MINNESOTA OF MNPLS-ST PAUL	MINNEAPOLIS MINNESOTA	82	06-83	1	PB	40,368	56,112
1	R01 GM29353-01A1 22400	KLAPPER, MICHAEL H CHYMOTRYPSIN DEACYLATION--AN IN-DEPTH STUDY	OHIO STATE UNIVERSITY	COLUMBUS OHIO	82	06-83	2	PB	75,634	95,109
5	R01 GM29595-03 22400	STUBBE, JOANNE MECHANISM AND INHIBITION OF RIBONUCLEOTIDE REDUCTASE	UNIVERSITY OF WISCONSIN MADISON	MADISON WISCONSIN	82	06-83	0	PB	57,728	78,725
1	R01 GM29805-01 22450	SENIOR, ALAN E OSCP AND F6--TWO SUBUNITS OF MITOCHONDRIAL ATPASE	UNIVERSITY OF ROCHESTER	ROCHESTER NEW YORK	82	06-83	2	PB	44,681	71,707

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5	R01 GM29838-02 22450	POYTON, ROBERT O STRUCTURE AND ASSEMBLY OF CYTOCHROME WITH OXIDASE	UNIVERSITY OF COLORADO AT BOULDER	BOULDER COLORADO	82	06-83	1	PB		43,277	59,468
1	R01 GM30178-01A1 22500	PRENDERGAST, FRANKLIN G BIOCHEMISTRY OF BIOLUMINESCENCE IN AEQUORIN	MAYO FOUNDATION	ROCHESTER MINNESOTA	82	06-83	2	PB		43,850	51,642
1	R01 GM30195-01A1 22400	BELL, J ELLIS MECHANISM AND REGULATION OF GLUTAMATE DEHYDROGENASE	UNIVERSITY OF ROCHESTER	ROCHESTER NEW YORK	82	06-83	2	PB		50,474	72,232
1	R01 GM30217-01 22400	VIOLA, RONALD E METAL ION AND SUBSTRATE SPECIFICITY OF L-ASPARTASE	SOUTHERN ILLINOIS UNIV AT EDWARDSVILLE	EDWARDSVILLE ILLINOIS	82	03-83	2	PB		48,666	63,276
9	R01 GM30286-04 MH 11920	COWARD, JAMES K A MECHANISTIC STUDY OF BIOLOGICAL TRANSALKYLATION	RENSSELAER POLYTECHNIC INSTITUTE	TROY NEW YORK	82	02-83	2	PB		72,129	105,809
2	R01 GM30327-02 22400	TSAI, MING-DAW STEREOCHEMISTRY OF ENZYME REACTIONS TO PHOSPHOROUS	OHIO STATE UNIVERSITY	COLUMBUS OHIO	82	06-83	2	PB		52,309	67,593
5	R01 GM30480-02 22400	FREY, PERRY A NUCLEOTIDYL AND PHOSPHOTRANSFERASE STEREOCHEMISTRY	UNIVERSITY OF WISCONSIN MADISON	MADISON WISCONSIN	82	06-83	3	PB		71,236	99,462
1	R01 GM30500-01 22450	NJUS, DAVID L OXIDATION-REDUCTION REACTIONS IN CHROMAFFIN GRANULES	WAYNE STATE UNIVERSITY	DETROIT MICHIGAN	82	08-83	2	PB		30,720	42,882
1	R01 GM30509-01 22400	LANDS, WILLIAM E PROSTAGLANDIN SYNTHASE--STRUCTURE AND FUNCTION	UNIVERSITY OF ILLINOIS MEDICAL CENTER	CHICAGO ILLINOIS	82	04-83	2	PB		53,443	83,906
1	R01 GM30552-01 22450	SMITH, JERRY C MOLECULAR PROBES OF CHARGE SEPARATION IN MEMBRANES	GEORGIA STATE UNIVERSITY	ATLANTA GEORGIA	82	04-83	2	PB		47,413	66,558
1	R01 GM30910-01 ES 22400	ARMSTRONG, RICHARD N MECHANISM OF ACTION OF GULUTATHIONE S-TRANSFERASE	UNIVERSITY OF MARYLAND COLLEGE PK CAMPUS	COLLEGE PARK MARYLAND	82	06-83	2	PB		65,447	87,698
1	R01 GM30911-01 22400	PETTIGREW, DONALD W ASSEMBLY AND CATALYSIS IN REGULATORY ENZYMES	TEXAS AGRI AND MECH UNIV COLLEGE STATION	COLLEGE STATION TEXAS	82	08-83	2	PB		52,527	64,512

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1	R01 GM30975-01 22450	SCOTT, ROBERT A ELECTROSTATIC EFFECTS IN CYTOCHROME C ELECTRON TRANSFER	UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN	URBANA ILLINOIS	82	06-83	2	PB	50,150	65,435
1	R01 GM31001-01 11760	JOHNSON, ERIC F CYTOCHROME P-450 POLYMORPHISM	SCRIPPS CLINIC AND RESEARCH FOUNDATION	LA JOLLA CALIFORNIA	82	07-83	2	PB	82,236	131,973
1	R01 GM31083-01 22300	MURPHY, ALEXANDER J SARCOPLASMIC RETICULUM ATPASE--STRUCTURE AND MECHANISM	UNIVERSITY OF THE PACIFIC	SAN FRANCISCO CALIFORNIA	82	08-83	2	PB	57,180	78,380
1	R01 GM31086-01 22450	GARLID, KEITH D ION TRANSPORT MECHANISMS IN MITOCHONDRIA	MEDICAL COLLEGE OF OHIO AT TOLEDO	TOLEDO OHIO	82	06-83	2	PB	86,830	117,831
1	R01 GM31099-01 AM 22400	LOWENSTEIN, JOHN M FUNCTION AND CONTROL OF EXTRAMITOCHONDRIAL B-OXIDATION	BRANDEIS UNIVERSITY	WALTHAM MASSACHUSETTS	82	06-83	4	PB	86,613	146,662
1	R01 GM31145-01 22500	WEISS, RICHARD L 15N-NUCLEAR MAGNETIC RESONANCE IN BIOLOGY	UNIVERSITY OF CALIFORNIA LOS ANGELES	LOS ANGELES CALIFORNIA	82	06-83	2	PB	58,053	79,359
1	R01 GM31296-01 11760	MASTERS, BETTIE SUE PROSTAGLANDIN 19- AND 20-HYDROXYLATION BY CYTOCHROME P-4	MEDICAL COLLEGE OF WISCONSIN	MILWAUKEE WISCONSIN	82	05-83	2	PB	52,904	70,014
7	R01 GM31686-01 22400	COOK, PAUL F KINETIC AND CHEMICAL MECHANISMS OF ENZYMES	TEXAS COLLEGE OF OSTEOPATHIC MEDICINE	FORT WORTH TEXAS	82	06-83	2	PB	33,000	39,075
1	R01 GM31704-01 22400	JORNS, MARILYN S FLAVOENZYME MECHANISMS: REDOX AND NON-REDOX REACTIONS	HAHNEMANN MED COL & HOSP OF PHILADELPHIA	PHILADELPHIA PENNSYLVANIA	82	07-83	2	PB	48,455	75,105
7	R01 GM31756-01 22450	SLIGAR, STEPHEN G HEME PROTEIN REDUCTASES	UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN	URBANA ILLINOIS	82	07-83	3	PB	81,263	114,616
									0	0
***	0	* CENTERS							5,772,618	8,110,880
***	94	NONCENTERS							5,772,618	8,110,880
***	94	TOTAL								

T	GRANT NUMBER / PROGRAM (FINE CODE)	INVESTIGATOR / PROJECT TITLE	GRANTEE INSTITUTION	CITY / STATE	FY	END-DATE	FUT-YRS AVAILABLE	IRG	SUB	DOLLARS DIRECT	DOLLARS TOTAL
5	R01 GM16133-14 12820	UPDIKE, STUART J IMMOBILIZED ENZYMES TO ALTER AND ANALYZE METABOLISM	UNIVERSITY OF WISCONSIN	MADISON MADISON	81 WISCONSIN	06-83	0	PBC		53,095	74,067
5	R01 GM17534-12 22400	NISHIMURA, JONATHAN S STUDY OF SUCCINYL-COA SYNTHETASE AND RELATED ENZYMES	UNIVERSITY OF TEXAS HLTH SCI CTR SAN ANT	SAN ANTONIO	82 TEXAS	08-83	1	PBC		56,735	77,160
5	R01 GM18405-11 22300	GLASER, LUIS REGULATION AND MECHANISM OF CELL SURFACE SYNTHESIS	WASHINGTON UNIVERSITY	SAINT LOUIS	82 MISSOURI	04-83	1	PBC		102,853	158,872
5	R01 GM20122-10 22400	PIGIET, VINCENT P, JR BASIS FOR REGULATION OF RIBONUCLEOTIDE REDUCTASE	JOHNS HOPKINS UNIVERSITY	BALTIMORE	82 MARYLAND	06-83	1	PBC		52,569	78,854
5	R01 GM21314-07 22500	RIGGS, AUSTEN F, II STRUCTURAL BIOCHEMISTRY OF HEMOGLOBINS AND HEMOCYANINS	UNIVERSITY OF TEXAS AUSTIN	AUSTIN	82 TEXAS	06-83	1	PBC		54,280	73,278
5	R01 GM21846-07 21600	CHAE, CHI-BOM ROLE OF CHROMOSOMAL PROTEASE IN NUCLEAR FUNCTIONS	UNIVERSITY OF NORTH CAROLINA CHAPEL HILL	CHAPEL HILL	82 NORTH CAROLINA	03-83	0	PBC		36,093	49,990
5	R01 GM22430-06 22400	HUANG, CHING-HSIEN PROTEIN KINASE--STRUCTURE AND BIOLOGICAL ACTIVITY	UNIVERSITY OF VIRGINIA CHARLOTTESVILLE	CHARLOTTESVILLE	82 VIRGINIA	06-83	0	PBC		76,448	109,707
2	R01 GM22580-07 21750	PAULE, MARVIN R GENE SELECTION BY MULTIPLE EUKARYOTIC RNA POLYMERASES	COLORADO STATE UNIVERSITY	FORT COLLINS	82 COLORADO	03-83	2	PBC		82,893	103,400
5	R01 GM22996-07 22300	LIENHARD, GUSTAV E THE GLUCOSE TRANSPORT SYSTEM OF THE HUMAN ERYTHROCYTE	DARTMOUTH COLLEGE	HANOVER	82 NEW HAMPSHIRE	08-83	1	PBC		60,187	89,378
5	R01 GM23030-07 21600	KRUEGER, ROBERT C STRUCTURE AND TEMPLATE ACTIVITY OF CHROMATIN	UNIVERSITY OF CINCINNATI	CINCINNATI	82 OHIO	06-83	1	PBC		33,794	47,312
5	R01 GM23189-06 22300	VILLAREJO, MERNA R ISOLATION AND CHARACTERIZATION OF THE LAC PERMEASE	UNIVERSITY OF CALIFORNIA DAVIS	DAVIS	81 CALIFORNIA	10-82	0	PBC		40,861	53,528
5	R01 GM23259-06 21750	NILES, EDWARD G SPECIFIC SYNTHESIS AND PROCESSING OF RRNA IN VITRO	STATE UNIVERSITY OF NEW YORK AT BUFFALO	BUFFALO	81 NEW YORK	07-83	0	PBC		42,140	62,578

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5	R01 GM23681-06 21600	SHAW, BARBARA R CHANGES IN NUCLEOSOME STRUCTURE DURING EMBRYOGENESIS	DUKE UNIVERSITY	DURHAM NORTH CAROLINA	82	12-82	1	PBC	40,187	59,406
5	R01 GM23902-06 22410	LAINE, ROGER A CHEMISTRY OF CELL-SURFACE AND RELEASED GLYCOPROTEINS	UNIVERSITY OF KENTUCKY	LEXINGTON KENTUCKY	82	06-83	0	PBC	79,214	115,813
2	R01 GM24821-04 22410	LENNARZ, WILLIAM J ENZYMATIC CONVERSION OF PROTEINS TO GLYCOPROTEINS	JOHNS HOPKINS UNIVERSITY	BALTIMORE MARYLAND	82	03-83	2	PBC	77,052	105,428
5	R01 GM24949-05 21320	GROSS, MARTIN TRANSLATIONAL CONTROL OF PROTEIN SYNTHESIS BY HEMIN	UNIVERSITY OF CHICAGO	CHICAGO ILLINOIS	82	08-83	3	PBC	54,260	91,009
5	R01 GM25323-05 22400	MOORE, STANFORD BIOCHEMISTRY OF NUCLEASES	ROCKEFELLER UNIVERSITY	NEW YORK NEW YORK	82	06-83	0	PBC	82,761	127,655
2	R01 GM25364-04 22410	KELLER, RONALD K REGULATION OF GLYCOPROTEIN BIOSYNTHESIS	UNIVERSITY OF SOUTH FLORIDA	TAMPA FLORIDA	82	11-82	4	PBC	47,612	71,894
5	R01 GM26193-03 22410	BE MILLER, JAMES N POTENTIAL GLYCOSYLTRANSFERASE INHIBITORS	SOUTHERN ILLINOIS UNIVERSITY CARBONDALE	CARBONDALE ILLINOIS	81	05-83	0	PBC	45,926	68,261
5	R01 GM26559-03 22400	HELLER, JOHN S POST-TRANSLATIONAL CONTROL OF ORNITHINE DECARBOXYLASE	YALE UNIVERSITY	NEW HAVEN CONNECTICUT	81	11-82	0	PBC	48,575	75,855
5	R01 GM26834-03 22400	HORNER, WILLIAM H GUANIDINE METABOLISM IN MAMMALS	GEORGETOWN UNIVERSITY	WASHINGTON DIST OF COL	82	03-83	0	PBC	42,043	59,862
5	R01 GM27168-03 21320	ROBERTSON, HUGH D RNA PROCESSING ENZYMES IN HELA CELLS	ROCKEFELLER UNIVERSITY	NEW YORK NEW YORK	82	03-83	0	PBC	31,400	47,755
5	R01 GM27993-03 22200	RHODES, R KENT PHYSIOLOGICAL SIGNIFICANCE OF A & B CHAIN COLLAGEN	UNIVERSITY OF ALABAMA IN BIRMINGHAM	BIRMINGHAM ALABAMA	82	06-83	0	PBC	56,202	75,905
5	R01 GM28577-02 22200	BALIAN, GARY INTERACTION OF CONNECTIVE TISSUE MOLECULES WITH CELLS	UNIVERSITY OF VIRGINIA CHARLOTTESVILLE	CHARLOTTESVILLE VIRGINIA	82	01-83	1	PBC	35,523	51,058

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5	R01 GM28949-02 22410	CHAMBERS, JAMES P CHARACTERIZATION OF THE OLIGOSACCHARIDES OF GLUCOSIDASE	UNIVERSITY OF TEXAS HLTH SCI CTR HOUSTON	HOUSTON TEXAS	82	03-83	1	PBC 37,279	51,445
5	R01 GM29007-02 22500	SHIVELY, JOHN E MICROSEQUENCING AND MOLECULAR CLONING OF FIBRONECTINS	CITY OF HOPE NATIONAL MEDICAL CENTER	DUARTE CALIFORNIA	82	08-83	1	PBC 78,563	112,974
1	R01 GM29037-01A1 21280	AVADHANI, NAVAYAN G MITOCHONDRIAL GENES AND PLASMIDS IN MAMMALIAN CELLS	UNIVERSITY OF PENNSYLVANIA	PHILADELPHIA PENNSYLVANIA	82	04-83	3	PBC 56,851	93,804
5	R01 GM29039-02 22500	KUROSKY, ALEXANDER HUMAN FIBRONECTIN: STRUCTURE AND FUNCTION	UNIVERSITY OF TEXAS MED BR GALVESTON	GALVESTON TEXAS	82	03-83	3	PBC 67,410	90,330
5	R01 GM29332-09 11930	BORCHARDT, RONALD T STRUCTURAL ANALOGS OF S-ADENOSYLMETHIONINE	UNIVERSITY OF KANSAS LAWRENCE	LAWRENCE KANSAS	82	11-82	3	PBC 66,892	91,272
1	R01 GM29434-01A1 11850	FELDHOFF, RICHARD C HUMAN PLASMA ALBUMIN: LIGAND BINDING	UNIVERSITY OF LOUISVILLE	LOUISVILLE KENTUCKY	82	07-83	2	PBC 47,617	62,220
1	R01 GM29804-01 22410	OLDEN, KENNETH SEGREGATION, PROCESSING & STABILIZATION OF GLYCOPROTEIN	HOWARD UNIVERSITY	WASHINGTON DIST OF COL	82	12-82	2	PBC 103,847	186,925
1	R01 GM30416-01 22400	STARCHER, BARRY C ELASTIN TURNOVER	UNIVERSITY OF TEXAS AUSTIN	AUSTIN TEXAS	82	04-83	2	PBC 61,292	81,904
7	R01 GM30425-01 22500	SILVER, FREDERICK H COLLAGEN FIBRILLOGENESIS--MOLECULAR AND CELLULAR STEPS	RUTGERS MEDICAL SCHOOL	PISCATAWAY NEW JERSEY	81	02-83	0	PBC 20,399	33,760
7	R01 GM30952-01 22410	HORST, MICHAEL N CHITIN BIOSYNTHESIS IN A NON-FUNGAL SYSTEM	MERCER UNIVERSITY MACON	MACON GEORGIA	82	11-82	2	PBC 23,716	31,263
1	R01 GM31178-01 21750	HARALSON, MICHAEL A THE BIOSYNTHESIS AND REGULATION OF TYPE V PROCOLLAGEN	VANDERBILT UNIVERSITY	NASHVILLE TENNESSEE	82	07-83	3	PBC 63,421	93,987
1	R01 GM31184-01 CA 22200	SANDO, JULIANNE J CELLULAR MECHANISM OF ACTION OF PHORBOL ESTER PROMOTERS	UNIVERSITY OF VIRGINIA CHARLOTTESVILLE	CHARLOTTESVILLE VIRGINIA	82	06-83	2	PBC 54,171	69,526

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1	R01 GM31265-01 22410	HERSCOVICS, ANNETTE A MANNOPROTEIN BIOSYNTHESIS IN SACCHAROMYCES CEREVISIAE	MC GILL UNIVERSITY	MONTREAL CANADA	82	04-83	2	PBC		46,094	46,094
7	R01 GM31655-01 21200	COZZARELLI, NICHOLAS R RNA LIGASE FUNCTION AND USE IN DNA SYNTHESIS	UNIVERSITY OF CALIFORNIA	BERKELEY BERKELEY CALIFORNIA	82	02-83	1	PBC		29,000	41,151
***	0	* CENTERS								0	0
***	38	NONCENTERS								2,089,255	3,014,680
***	38	TOTAL								2,089,255	3,014,680
2	R01 GM00091-37 22400	RAJAGOPALAN, K V STRUCTURE AND FUNCTION OF ENZYMES--ROLE OF METALS	DUKE UNIVERSITY	DURHAM NORTH CAROLINA	82	05-83	4	PC		164,164	231,246
5	R01 GM04712-25 11920	WESTHEIMER, FRANK H MECHANISM OF ENZYME ACTION	HARVARD UNIVERSITY	CAMBRIDGE MASSACHUSETTS	81	11-83	0	PC		49,992	73,508
3	R01 GM04712-25S1 11920	WESTHEIMER, FRANK H MECHANISM OF ENZYME ACTION	HARVARD UNIVERSITY	CAMBRIDGE MASSACHUSETTS	81	11-83	0	PC		26,000	38,740
2	R01 GM05301-25 11920	COHN, ERIC E METABOLISM OF AROMATIC COMPOUNDS	UNIVERSITY OF CALIFORNIA	DAVIS DAVIS CALIFORNIA	82	02-83	4	PC		76,903	96,558
5	R01 GM06196-24 21200	LEHMAN, I ROBERT DNA REPLICATION IN PRO- AND EUKARYOTES	STANFORD UNIVERSITY	STANFORD CALIFORNIA	82	08-83	1	PC		156,038	256,607
5	R01 GM07261-22 22400	LOWENSTEIN, JOHN M ENZYMATIC & CHEMICAL REACTIONS OF ADENOSINE TRIPHOSPHATE	BRANDEIS UNIVERSITY	WALTHAM MASSACHUSETTS	82	12-82	1	PC		64,575	103,636

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5	R01 GM08822-20 22400	OLSON, JAMES MECHANISM OF AMYLASE ACTION	IOWA STATE UNIVERSITY OF SCIENCE & TECH	AMES IOWA	81	03-83	0	PC		71,253	87,259
5	R01 GM09042-20 21320	HOROWITZ, JACK STRUCTURAL BASIS OF RIBONUCLEIC ACID SPECIFICITY	IOWA STATE UNIVERSITY OF SCIENCE & TECH	AMES IOWA	82	11-82	1	PC		54,270	72,722
5	R01 GM10317-18 21750	GREENE, RONALD C BIOCHEMISTRY OF SULFONIUM COMPOUNDS	DUKE UNIVERSITY	DURHAM NORTH CAROLINA	80	08-83	0	PC		41,477	50,187
5	R01 GM10374-20 22410	SCHMID, KARL CHEMISTRY OF HUMAN PROTEINS AND GLYCOPROTEINS	BOSTON UNIVERSITY	BOSTON MASSACHUSETTS	82	11-82	0	PC		100,783	153,176
5	R01 GM10390-19 21750	FURTH, JOHN J RNA METABOLISM IN MAMMALIAN CELLS	UNIVERSITY OF PENNSYLVANIA	PHILADELPHIA PENNSYLVANIA	82	07-83	0	PC		72,346	117,853
5	R01 GM10791-20 21320	KELLER, ELIZABETH B THE BIOSYNTHESIS OF RNA'S: MECHANISMS AND CONTROLS	CORNELL UNIVERSITY ITHACA	ITHACA NEW YORK	82	06-83	3	PC		91,851	126,218
5	R01 GM10831-24 22500	LASKOWSKI, MICHAEL, JR PROTEIN PROTEINASE INHIBITORS	PURDUE UNIVERSITY WEST LAFAYETTE	WEST LAFAYETTE INDIANA	82	08-83	3	PC		189,117	259,889
5	R01 GM11040-18 22400	BRIGHT, HAROLD J MECHANISM OF ENZYME ACTION	UNIVERSITY OF PENNSYLVANIA	PHILADELPHIA PENNSYLVANIA	82	03-83	0	PC		92,555	152,716
5	R01 GM12053-18 21320	KAJI, AKIRA BIOCHEMICAL CONTROL OF MACROMOLECULAR SYNTHESIS	UNIVERSITY OF PENNSYLVANIA	PHILADELPHIA PENNSYLVANIA	82	12-82	0	PC		44,436	71,598
2	R01 GM12573-18 CA 11770	GOLDBERG, IRVING H MOLECULAR PHARMACOLOGY OF ANTICANCER DRUGS	HARVARD UNIVERSITY	BOSTON MASSACHUSETTS	82	12-82	4	PC		168,759	294,984
5	R01 GM12607-18 21320	KONIGSBERG, WILLIAM H RELATION OF PROTEIN STRUCTURE TO BIOLOGICAL FUNCTION	YALE UNIVERSITY	NEW HAVEN CONNECTICUT	82	12-82	2	PC		94,474	149,269
5	R01 GM12934-18 21320	HAYASHI, MASAKI SYNTHESIS OF INFECTIOUS BACTERIOPHAGE PARTICLES	UNIVERSITY OF CALIFORNIA SAN DIEGO	LA JOLLA CALIFORNIA	82	04-83	0	PC		70,985	92,680

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5	R01 GM13344-17 21200	HURWITZ, JERARD STUDIES OF MACROMOLECULAR ALTERATION AND SYNTHESIS	YESHIVA UNIVERSITY	NEW YORK	82 NEW YORK	11-82	3	PC	138,756	258,086
5	R01 GM13864-17 21600	KUEHL, LEROY R NONHISTONE NUCLEAR PROTEINS	UNIVERSITY OF UTAH	SALT LAKE CITY	82 UTAH	05-83	1	PC	62,194	90,181
5	R01 GM13957-16 21320	MORRIS, DAVID R BIOSYNTHESIS AND BIOLOGICAL FUNCTION OF POLYAMINES	UNIVERSITY OF WASHINGTON	SEATTLE	82 WASHINGTON	04-83	0	PC	66,181	88,616
5	R01 GM13972-17 22300	LIPMANN, FRITZ GLUCOSE AND PHOSPHATE METABOLISM IN NORMAL AND MALIGNANT	ROCKEFELLER UNIVERSITY	NEW YORK	82 NEW YORK	08-83	0	PC	90,843	142,624
5	R01 GM14033-16 22400	SHRAGO, EARL S CONTROL MECHANISMS IN INTERMEDIARY METABOLISM	UNIVERSITY OF WISCONSIN	MADISON MADISON	82 WISCONSIN	12-82	2	PC	50,751	72,144
5	R01 GM15924-15 22300	STRITTMATTER, PHILIPP STUDY OF STRUCTURE AND FUNCTION OF MICROSOMAL MEMBRANES	UNIVERSITY OF CONNECTICUT HEALTH CENTER	FARMINGTON	82 CONNECTICUT	05-83	0	PC	138,000	198,975
5	R01 GM16317-15 21320	DEUTSCHER, MURRAY P ENZYMOLOGY AND CONTROL OF AMINO ACID ACTIVATION	UNIVERSITY OF CONNECTICUT HEALTH CENTER	FARMINGTON	82 CONNECTICUT	08-83	1	PC	126,016	182,723
5	R01 GM16916-09 22400	SPIVEY, HOWARD O PROPERTIES OF CONCENTRATED ENZYME SOLUTIONS	OKLAHOMA STATE UNIVERSITY	STILLWATER STILLWATER	82 OKLAHOMA	03-83	0	PC	35,405	46,381
5	R01 GM17151-13 21320	RAJBHANDARY, UTTAM L STRUCTURE AND FUNCTION OF TRANSFER RIBONUCLEIC ACIDS	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	CAMBRIDGE	82 MASSACHUSETTS	05-83	0	PC	101,685	171,298
5	R01 GM17924-12 21320	TRAUT, ROBERT R RIBOSOME STRUCTURE AND FUNCTION	UNIVERSITY OF CALIFORNIA DAVIS	DAVIS	82 CALIFORNIA	04-83	1	PC	105,209	136,097
2	R01 GM18278-12 11910	KOLATTUKUDY, P E BIOCHEMISTRY OF NATURAL PRODUCTS	WASHINGTON STATE UNIVERSITY	PULLMAN	82 WASHINGTON	12-82	4	PC	159,000	226,230
2	R01 GM18649-24 21200	BESSMAN, MAURICE J ENZYMATIC SYNTHESIS OF NUCLEOTIDES AND DNA	JOHNS HOPKINS UNIVERSITY	BALTIMORE	82 MARYLAND	11-82	4	PC	77,484	115,726

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5	R01 GM18673-11 / 21310	KRAKOW, JOSEPH S / RNA SYNTHESIS BY BACTERIAL RNA POLYMERASE	HUNTER COLLEGE	NEW YORK	NEW YORK	82	11-82	1	PC	75,398	121,760
2	R01 GM19091-12 / 22400	WAKIL, SALIH J / THE METABOLISM AND CONTROL OF FATTY ACIDS	BAYLOR COLLEGE OF MEDICINE	HOUSTON	TEXAS	82	08-83	4	PC	162,258	209,871
5	R01 GM19351-11 / 21320	FOURNIER, MAURILLE J, JR / BIOSYNTHESIS OF TRANSFER RIBONUCLEIC ACID	UNIVERSITY OF MASSACHUSETTS AMHERST	AMHERST	MASSACHUSETTS	82	05-83	0	PC	57,143	82,311
5	R01 GM19386-11 / 21320	COOPER, TERRANCE G / SYNTHESIS AND ASSEMBLY OF ENZYMES IN EUCARYOTES	UNIVERSITY OF PITTSBURGH	PITTSBURGH	PENNSYLVANIA	82	04-83	2	PC	82,798	124,813
5	R01 GM19506-09 / 21320	HAMPEL, ARNOLD E / AMINOACYL-TRNA SYNTHETASES IN CHO CELLS	NORTHERN ILLINOIS UNIVERSITY	DE KALB	ILLINOIS	81	11-82	0	PC	49,905	69,972
5	R01 GM19756-11 / 21320	DAHLBERG, ALBERT E / POLYSOMES & SUBUNITS: STRUCTURE-FUNCTION RELATIONSHIPS	BROWN UNIVERSITY	PROVIDENCE	RHODE ISLAND	82	08-83	0	PC	87,049	143,631
5	R01 GM19875-11 / 22400	ROSE, ZELDA B / ENZYMES OF 2,3-DIPHOSPHOGLYCERATE METABOLISM	INSTITUTE FOR CANCER RESEARCH	PHILADELPHIA	PENNSYLVANIA	82	08-83	2	PC	65,900	106,758
5	R01 GM19993-15 / 21320	AMES, BRUCE N / REGULATION OF GENE FUNCTION AND PROTEIN SYNTHESIS	UNIVERSITY OF CALIFORNIA BERKELEY	BERKELEY	CALIFORNIA	82	12-82	0	PC	105,928	138,223
5	R01 GM20011-10 / 22400	WALSH, CHRISTOPHER T / ENZYMATIC REACTION MECHANISMS	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	CAMBRIDGE	MASSACHUSETTS	82	12-82	3	PC	117,297	198,871
5	R01 GM20212-07 / 22500	TANG, JORDAN J / STRUCTURE AND FUNCTION OF MAMMALIAN CATHEPSIN D	OKLAHOMA MEDICAL RESEARCH FOUNDATION	OKLAHOMA CITY	OKLAHOMA	82	11-82	0	PC	42,860	58,405
5	R01 GM20338-15 / 21600	COLE, R DAVID / HISTONE BIOCHEMISTRY AND THE INFLUENCE OF HORMONES	UNIVERSITY OF CALIFORNIA BERKELEY	BERKELEY	CALIFORNIA	82	05-83	0	PC	107,080	139,035
5	R01 GM20501-08 / 22400	DENNIS, EDWARD A / ACTION OF LIPOLYTIC ENZYMES	UNIVERSITY OF CALIFORNIA SAN DIEGO	LA JOLLA	CALIFORNIA	82	05-83	3	PC	77,469	100,771

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5	R01 GM20626-07 21320	MENNINGER, JOHN R CONTROL AND MECHANISM OF PROTEIN-CHAIN TERMINATION	UNIVERSITY OF IOWA	IOWA CITY IOWA	80	08-83	0	PC 53,949	74,903
2	R01 GM20693-06 21320	COOPER, TERRANCE G GENETICS AND ISOLATION OF A EUCARYOTIC CONTROL PROTEIN	UNIVERSITY OF PITTSBURGH	PITTSBURGH PENNSYLVANIA	82	11-82	4	PC 49,637	72,276
5	R01 GM20784-08 21750	WHITELEY, HELEN R REGULATION OF RNA SYNTHESIS	UNIVERSITY OF WASHINGTON	SEATTLE WASHINGTON	82	05-83	1	PC 62,413	83,571
5	R01 GM20818-08 21320	RHOADS, ROBERT E REGULATION OF OVALBUMIN SYNTHESIS IN CHICK OVIDUCT	UNIVERSITY OF KENTUCKY	LEXINGTON KENTUCKY	81	11-82	0	PC 68,999	96,944
5	R01 GM20940-19 22400	ROSE, IRWIN A MECHANISMS OF PROTON AND PHOSPHORYL TRANSFER	INSTITUTE FOR CANCER RESEARCH	PHILADELPHIA PENNSYLVANIA	82	12-82	1	PC 64,399	100,159
5	R01 GM21095-08 21250	SMALL, GARY D DNA METABOLISM IN EUKARYOTES	UNIVERSITY OF SOUTH DAKOTA	VERMILLION SOUTH DAKOTA	82	06-83	0	PC 31,167	41,254
5	R01 GM21120-08 21750	CARUTHERS, MARVIN H CHROMOSOME DNA REGULATORY REGIONS	UNIVERSITY OF COLORADO AT BOULDER	BOULDER COLORADO	82	11-82	0	PC 91,841	125,353
2	R01 GM21220-06A1 11870	WELLS, JACK N TISSUE SPECIFIC INHIBITORS OF PHOSPHODIESTERASE	VANDERBILT UNIVERSITY	NASHVILLE TENNESSEE	82	03-83	4	PC 65,206	94,052
5	R01 GM21359-07 21320	BODLEY, JAMES W GUANINE NUCLEOTIDES AND PROTEIN CHAIN GROWTH	UNIVERSITY OF MINNESOTA OF MNPLS-ST PAUL	MINNEAPOLIS MINNESOTA	82	12-82	0	PC 66,496	90,075
5	R01 GM21451-08 22410	LENNARZ, WILLIAM J LIPID CARRIERS IN MEMBRANE GLYCOPROTEIN SYNTHESIS	JOHNS HOPKINS UNIVERSITY	BALTIMORE MARYLAND	82	05-83	2	PC 96,177	144,266
5	R01 GM21769-08 21320	WOOL, IRA G PROTEINS OF EUKARYOTIC RIBOSOMES	UNIVERSITY OF CHICAGO	CHICAGO ILLINOIS	82	01-83	2	PC 122,746	192,711
5	R01 GM21882-08 11920	ETZLER, MARILYNN E STRUCTURE, DEVELOPMENT, AND MODIFICATIONS OF LECTINS	UNIVERSITY OF CALIFORNIA DAVIS	DAVIS CALIFORNIA	82	01-83	0	PC 54,771	71,750

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5	R01 GM21998-08 21100	HALEY, BOYD E APPLICATION OF PHOTOAFFINITY NUCLEOTIDE ANALOGS	UNIVERSITY OF WYOMING	LARAMIE WYOMING	82	02-83	3	PC	76,615	105,715
2	R01 GM22125-07 22400	WHITELEY, JOHN M PTERIDINE DEPENDENT HYDROXYLASE FROM LIVER AND BRAIN	SCRIPPS CLINIC AND RESEARCH FOUNDATION	LA JOLLA CALIFORNIA	82	03-83	4	PC	84,442	125,665
5	R01 GM22150-08 21320	KAHAN, LAWRENCE IMMUNOCHEMICAL ANALYSIS OF 30S RIBOSOME STRUCTURE	UNIVERSITY OF WISCONSIN MADISON	MADISON WISCONSIN	82	04-83	0	PC	47,300	65,591
2	R01 GM22199-07 21200	AGARWAL, KAN L DNA-PROTEIN INTERACTION	UNIVERSITY OF CHICAGO	CHICAGO ILLINOIS	82	03-83	3	PC	73,920	113,774
5	R01 GM22261-08 22500	LIGHT, ALBERT BOVINE ENTEROKINASE STRUCTURE AND FUNCTION	PURDUE UNIVERSITY WEST LAFAYETTE	WEST LAFAYETTE INDIANA	82	04-83	0	PC	50,277	68,253
5	R01 GM22737-04 11910	OLIVERA, BALDOMERO M A BIOCHEMICAL CHARACTERIZATION OF CONUS TOXINS	UNIVERSITY OF UTAH	SALT LAKE CITY UTAH	81	03-83	0	PC	56,555	82,948
5	R01 GM22846-08 21200	GROSSMAN, LAWRENCE ENZYMATIC EXCISION AND REPAIR MECHANISM	JOHNS HOPKINS UNIVERSITY	BALTIMORE MARYLAND	82	08-83	1	PC	69,097	103,646
5	R01 GM23464-06 21750	SOGIN, MITCHELL L THE ROLE OF REPETITIVE DNA SEQUENCES IN GENE EXPRESSION	NATIONAL JEWISH HOSPITAL & RESEARCH CTR	DENVER COLORADO	82	01-83	0	PC	58,039	83,537
2	R01 GM23817-18 22500	FEENEY, ROBERT E COMPARATIVE BIOCHEMISTRY OF PROTEINS	UNIVERSITY OF CALIFORNIA DAVIS	DAVIS CALIFORNIA	82	05-83	3	PC	61,900	78,919
5	R01 GM23900-05 22410	TRIMBLE, ROBERT B GLYCOPROTEIN BIOSYNTHESIS IN YEAST	NEW YORK STATE DEPARTMENT OF HEALTH	ALBANY NEW YORK	81	08-83	0	PC	30,676	44,811
5	R01 GM24020-07 21200	ALBERTS, BRUCE M DNA-PROTEIN INTERACTIONS IN DNA-REPLICATION CONTROL	UNIVERSITY OF CALIFORNIA SAN FRANCISCO	SAN FRANCISCO CALIFORNIA	82	08-83	1	PC	143,794	183,272
5	R01 GM24035-06 22300	HELMKAMP, GEORGE M, JR MEMBRANE-PHOSPHOLIPID EXCHANGE PROTEIN INTERACTIONS	UNIVERSITY OF KANSAS COL HLTH SCI & HOSP	KANSAS CITY KANSAS	82	06-83	0	PC	53,278	71,073

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5	R01 GM24602-05 22500	HERMODSON, MARK A AMINO ACID SEQUENCES OF BINDING PROTEINS	PURDUE UNIVERSITY WEST LAFAYETTE	WEST LAFAYETTE	INDIANA	82	03-83	3	PC		78,997	108,996
5	R01 GM24825-05 21320	LEVIN, DANIEL H CONTROL OF PROTEIN SYNTHESIS BY DOUBLE-STRANDED RNA	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	CAMBRIDGE	MASSACHUSETTS	82	12-82	3	PC		79,626	128,219
5	R01 GM24963-05 21320	SPREMULLI, LINDA L MECHANISM OF PROTEIN BIOSYNTHESIS IN CHLOROPLASTS	UNIVERSITY OF NORTH CAROLINA CHAPEL HILL	CHAPEL HILL	NORTH CAROLINA	82	03-83	3	PC		55,116	76,150
5	R01 GM24979-05 11790	HOSTETLER, KARL Y PATHOGENESIS OF DRUG-INDUCED LIPIDOSIS	UNIVERSITY OF CALIFORNIA SAN DIEGO	LA JOLLA	CALIFORNIA	82	03-83	3	PC		70,571	84,473
2	R01 GM24983-04 21320	THOMPSON, ROBERT C ACCURACY OF PROTEIN BIOSYNTHESIS	TEMPLE UNIVERSITY	PHILADELPHIA	PENNSYLVANIA	82	04-83	4	PC		69,426	97,079
5	R01 GM25254-13 21320	DUDOCK, BERNARD S SEQUENCE ANALYSIS OF BIOLOGICALLY ALTERED TRNA	STATE UNIVERSITY NEW YORK STONY BROOK	STONY BROOK	NEW YORK	82	12-82	0	PC		49,167	73,141
2	R01 GM25434-04A1 21320	SLOBIN, LAWRENCE I CONTROL OF POLYPEPTIDE CHAIN ELONGATION IN EUCARYOTES	UNIVERSITY OF MISSISSIPPI MEDICAL CENTER	JACKSON	MISSISSIPPI	82	06-83	4	PC		63,010	82,955
5	R01 GM25766-22 22500	HILL, ROBERT L STRUCTURE AND FUNCTION OF PROTEINS	DUKE UNIVERSITY	DURHAM	NORTH CAROLINA	82	08-83	0	PC		161,831	241,247
5	R01 GM25794-03 21600	ISENBERG, IRVIN STUDY OF HMG AND A24 PROTEINS	OREGON STATE UNIVERSITY	CORVALLIS	OREGON	81	07-83	0	PC		36,425	46,948
5	R01 GM25973-03 22300	GREENBERG, G ROBERT MEMBRANE PROTEINS IN DEOXYRIBONUCLEOTIDE SYNTHESIS	UNIVERSITY OF MICHIGAN AT ANN ARBOR	ANN ARBOR	MICHIGAN	81	11-82	0	PC		56,084	87,743
2	R01 GM26020-04 22300	CLARKE, STEVEN G CONTROL OF EUCARYOTIC MEMBRANE FUNCTION BY METHYLATION	UNIVERSITY OF CALIFORNIA LOS ANGELES	LOS ANGELES	CALIFORNIA	82	11-82	4	PC		72,270	91,234
5	R01 GM26107-12 21200	OLIVERA, BALDOMERO M DISCONTINUOUS DNA SYNTHESIS IN VITRO	UNIVERSITY OF UTAH	SALT LAKE CITY	UTAH	82	04-83	1	PC		69,815	100,107

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5	R01 GM26134-09 22400	SUHADOLNIK, ROBERT J CELLULAR ROLE OF NAD, NAD ANALOGS, QTRNA & BIOSYNTHESIS	TEMPLE UNIVERSITY	PHILADELPHIA	PENNSYLVANIA	82	05-83	1	PC		70,760	107,468
5	R01 GM26333-03 21200	BERG, DOUGLAS E INITIATION OF DNA REPLICATION IN VITRO	WASHINGTON UNIVERSITY	SAINT LOUIS	MISSOURI	81	03-83	0	PC		56,879	87,612
5	R01 GM26600-03 22300	FERGUSON, KAREN A EFFECT OF STEROL ON MEMBRANE-BOUND ENZYMES	STATE UNIVERSITY OF NEW YORK AT BUFFALO	BUFFALO	NEW YORK	81	06-83	0	PC		48,889	71,388
5	R01 GM26796-03 21320	MERRICK, WILLIAM C MECHANISM OF PROTEIN SYNTHESIS INITIATION	CASE WESTERN RESERVE UNIVERSITY	CLEVELAND	OHIO	81	03-83	0	PC		58,299	85,991
2	R01 GM26832-04 AI 21320	BODLEY, JAMES W AMINO ACID X--STRUCTURE/DISTR/BIOSYNTHESIS/FUNCTION	UNIVERSITY OF MINNESOTA OF MNPLS-ST PAUL	MINNEAPOLIS	MINNESOTA	82	06-83	4	PC		65,436	88,226
5	R01 GM27214-03 21320	MORRISON, MARCELLE R MESSENGER RNA STRUCTURE, METABOLISM AND FUNCTION	UNIVERSITY OF TEXAS HLTH SCI CTR DALLAS	DALLAS	TEXAS	82	12-82	0	PC		40,938	55,471
5	R01 GM27256-03 22400	LEVINE, LAWRENCE PROSTAGLANDIN BIOSYNTHESIS BY CELLS IN CULTURE	BRANDEIS UNIVERSITY	WALTHAM	MASSACHUSETTS	82	11-82	2	PC		66,905	108,045
5	R01 GM27365-03 21320	WU, RAY FUNCTION OF INTERVENING SEQUENCE IN YEAST TRNA GENE	CORNELL UNIVERSITY ITHACA	ITHACA	NEW YORK	82	11-82	0	PC		54,218	86,666
5	R01 GM27632-03 22300	BARKER, ROBERT MEMBRANE OLIGOSACCHARIDES AND MONOSACCHARIDE METABOLISM	CORNELL UNIVERSITY ITHACA	ITHACA	NEW YORK	82	01-83	2	PC		48,381	69,503
5	R01 GM27784-02 22400	GRANT, GREGORY A STRUCTURE AND FUNCTION IN ALLOSTERIC REGULATION	WASHINGTON UNIVERSITY	SAINT LOUIS	MISSOURI	82	01-83	1	PC		45,032	69,800
5	R01 GM27800-03 11770	BOURNE, HENRY R MOLECULAR BASIS OF RECEPTOR-CYCLASE COUPLING	UNIVERSITY OF CALIFORNIA SAN FRANCISCO	SAN FRANCISCO	CALIFORNIA	82	05-83	2	PC		165,190	216,027
5	R01 GM27815-03 21320	HECHT, SIDNEY M NUCLEOTIDE REPLACEMENTS IN TRANSFER RNA	UNIVERSITY OF VIRGINIA CHARLOTTESVILLE	CHARLOTTESVILLE	VIRGINIA	82	03-83	0	PC		50,742	73,576

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5	R01 GM27904-03 22410	PAULSON, JAMES C MAMMALIAN SIALYLTRANSFERASES	UNIVERSITY OF CALIFORNIA	LOS ANGELES LOS ANGELES	CALIFORNIA	82	03-83	0	PC		49,308	64,593
5	R01 GM28140-03 22300	CARMAN, GEORGE M PHOSPHATIDYLINOSITOL METABOLISM AND MEMBRANE FUNCTION	RUTGERS THE STATE UNIV	NEW BRUNSWICK NEW BRUNSWICK	NEW JERSEY	82	06-83	0	PC		32,096	50,712
5	R01 GM28144-03 22400	GLASS, DAVID B SUBSTRATES AND INHIBITORS OF PROTEIN KINASES	EMORY UNIVERSITY	ATLANTA	GEORGIA	82	06-83	0	PC		49,596	74,044
5	R01 GM28286-03 22410	HANSON, BARBARA A MANNAN SYNTHESIS INHIBITION BY INOSITOL STARVATION	UNIVERSITY OF KENTUCKY	LEXINGTON	KENTUCKY	82	07-83	0	PC		23,365	34,440
5	R01 GM28354-03 21320	REEVES, ROBERT H GENETICALLY ALTERED PROLINE TRANSFER RNAS	FLORIDA STATE UNIVERSITY	TALLAHASSEE	FLORIDA	82	01-83	0	PC		31,670	45,318
5	R01 GM28481-02 21320	CHANG, SIMON H ROLE OF TRANSFER RNA IN CELL DIFFERENTIATION	LOUISIANA STATE UNIV A&M	COL BATON ROUGE BATON ROUGE	LOUISIANA	82	12-82	1	PC		30,377	40,401
5	R01 GM28605-02 21320	KOEPPE, ROGER E, II MOLECULAR STUDIES OF PROTEIN-NUCLEIC ACID RECOGNITION	UNIVERSITY OF ARKANSAS AT FAYETTEVILLE	FAYETTEVILLE	ARKANSAS	82	11-82	1	PC		29,192	39,309
5	R01 GM28651-02 21100	ITAKURA, KEIICHI SOLID-PHASE SYNTHESIS OF POLYNUCLEOTIDES	CITY OF HOPE NATIONAL MEDICAL CENTER	DUARTE	CALIFORNIA	82	03-83	0	PC		28,882	41,532
5	R01 GM28685-02 21320	GOLD, LAWRENCE M TRANSLATIONAL REGULATION: THE T4 RIIB CISTRON	UNIVERSITY OF COLORADO AT BOULDER	BOULDER	COLORADO	82	11-82	3	PC		119,289	166,408
1	R01 GM28744-01A1 21320	HAGUE, DONALD R REGULATION OF SYNTHESIS OF CO2-FIXING ENZYMES OF MAIZE	UNIVERSITY OF OREGON	EUGENE	OREGON	82	07-83	2	PC		42,149	56,327
5	R01 GM28747-02 21600	THOMAS, JOHN O STRUCTURE AND FUNCTION OF THE NUCLEAR RNP COMPLEXES	NEW YORK UNIVERSITY	NEW YORK	NEW YORK	82	11-82	1	PC		44,349	66,302
5	R01 GM28764-03 21100	REID, BRIAN R RECOGNITION OF TRANSFER RNA BY PROTEINS	UNIVERSITY OF WASHINGTON	SEATTLE	WASHINGTON	82	08-83	1	PC		77,514	102,526

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5	R01 GM28769-13 21600	WARNER, ROBERT C STUDIES OF POLYNUCLEOTIDES AND NUCLEIC ACIDS	UNIVERSITY OF CALIFORNIA	IRVINE IRVINE CALIFORNIA	82	01-83	1	PC	103,554	135,036
5	R01 GM28772-15 21320	MC LAUGHLIN, CALVIN S COMPARATIVE STRUCTURE AND FUNCTION OF RIBOSOMES	UNIVERSITY OF CALIFORNIA	IRVINE IRVINE CALIFORNIA	82	02-83	3	PC	115,467	146,513
1	R01 GM28978-01A1 22400	HORTON, H ROBERT SULFHYDRYL OXIDASE, GLUTAMYLTRANSFERASE, AND DISULFIDES	NORTH CAROLINA STATE UNIVERSITY	RALEIGH RALEIGH NORTH CAROLINA	82	08-83	2	PC	49,305	62,227
5	R01 GM29203-02 21600	REECK, GERALD R INTERACTIONS OF HMG PROTEINS WITH DNA	KANSAS STATE UNIVERSITY	MANHATTAN KANSAS	82	03-83	1	PC	26,948	37,636
5	R01 GM29220-02 22400	MALBON, CRAIG C. IMMOBILIZED FLUOROGENIC SUBSTRATES FOR PROTEASES	STATE UNIVERSITY NEW YORK	STONY BROOK STONY BROOK NEW YORK	82	03-83	1	PC	47,351	70,479
5	R01 GM29227-11 21600	HATTMAN, STANLEY M DNA MODIFICATION/RESTRICTION IN PRO- AND EUKARYOTES	UNIVERSITY OF ROCHESTER	ROCHESTER NEW YORK	82	08-83	0	PC	55,928	97,315
5	R01 GM29238-02 22400	LAW, JOHN H STUDY OF LIPID METABOLISM	UNIVERSITY OF ARIZONA	TUCSON ARIZONA	82	01-83	1	PC	105,537	150,918
5	R01 GM29242-02 22500	MARSHALL, JAMES J SYNTHETIC CARBOHYDRATE-PROTEIN CONJUGATES	UNIVERSITY OF NOTRE DAME	NOTRE DAME INDIANA	81	09-82	0	PC	60,544	92,632
2	R01 GM29265-02A1 21320	SCHWARTZ, IRA S RIBOSOME BINDING SITES FOR PROTEIN SYNTHESIS FACTORS	NEW YORK MEDICAL COLLEGE	VALHALLA NEW YORK	82	07-83	2	PC	73,576	110,869
5	R01 GM29272-02 21100	ENGLANDER, S WALTER STUDIES OF STRUCTURE AND DYNAMICS IN NUCLEIC ACID SYSTEM	UNIVERSITY OF PENNSYLVANIA	PHILADELPHIA PENNSYLVANIA	82	08-83	2	PC	30 733	50,709
5	R01 GM29415-02 22400	STUMPF, PAUL K THE MOLECULAR STRUCTURE OF FATTY ACID SYNTHETASES	UNIVERSITY OF CALIFORNIA	DAVIS DAVIS CALIFORNIA	82	08-83	0	PC	57,872	79,169
5	R01 GM29539-02 21750	BERGET, SUSAN M TRANSCRIPTIONAL CONTROL BY SMALL RIBONUCLEOPROTEINS	RICE UNIVERSITY	HOUSTON TEXAS	82	07-83	1	PC	62,909	86,814

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1	R01 GM29554-01 21200	SEEMAN, NADRIAN C PHYSICAL CHEMISTRY OF RECOMBINATIONAL INTERMEDIATES	STATE UNIVERSITY OF NEW YORK AT ALBANY	ALBANY	NEW YORK	82	07-83	2	PC		47,957	66,808
5	R01 GM29603-02 21320	ECCLESTON, JOHN F ENERGY TRANSDUCTION IN PROTEIN BIOSYNTHESIS	UNIVERSITY OF PENNSYLVANIA	PHILADELPHIA	PENNSYLVANIA	82	06-83	1	PC		61,804	101,977
5	R01 GM29681-02 21280	BOGENHAGEN, DANIEL F GENETIC FUNCTIONS OF MAMMALIAN MITOCHONDRIAL DNA	STATE UNIVERSITY NEW YORK STONY BROOK	STONY BROOK	NEW YORK	82	06-83	3	PC		52,251	78,082
5	R01 GM29833-08 22410	WAECHTER, CHARLES J DOLICHOL METABOLISM & MEMBRANE GLYCOPROTEIN BIOSYNTHESIS	UNIVERSITY OF MARYLAND AT BALTIMORE	BALTIMORE	MARYLAND	82	05-83	3	PC		83,778	122,784
1	R01 GM30179-01 22400	SCHULMAN, HOWARD CALCIUM AND CALMODULIN-DEPENDENT PROTEIN KINASES	STANFORD UNIVERSITY	STANFORD	CALIFORNIA	82	01-83	2	PC		72,487	103,170
1	R01 GM30308-01 22400	WILKINSON, KEITH D UBIQUITIN-DEPENDENT PROTEOLYSIS--SPECIFICITY/MECHANISM	EMORY UNIVERSITY	ATLANTA	GEORGIA	82	01-83	4	PC		70,614	92,171
5	R01 GM30317-03 21750	KEY, JOE L RNA METABOLISM IN DEVELOPMENT AND HORMONAL REGULATION	UNIVERSITY OF GEORGIA	ATHENS	GEORGIA	82	07-83	3	PC		92,093	126,138
7	R01 GM30399-01 21600	ROE, BRUCE A SEQUENCE ANALYSIS OF MAMMALIAN TRNA AND TRNA GENES	UNIVERSITY OF OKLAHOMA NORMAN	NORMAN	OKLAHOMA	81	08-83	0	PC		43,449	59,925
5	R01 GM30400-02 21320	ROE, BRUCE A THE ROLE OF MODIFIED NUCLEOTIDES IN MAMMALIAN TRNA	UNIVERSITY OF OKLAHOMA NORMAN	NORMAN	OKLAHOMA	82	08-83	0	PC		56,683	76,522
1	R01 GM30415-01 21200	LINN, STUART M STUDIES OF DNA POLYMERASES	UNIVERSITY OF CALIFORNIA BERKELEY	BERKELEY	CALIFORNIA	82	05-83	4	PC		82,160	106,380
1	R01 GM30471-01 22410	PLUMMER, T H, JR CHARACTERIZATION OF PEPTIDE: N-GLYCOSIDASES	NEW YORK STATE DEPARTMENT OF HEALTH	ALBANY	NEW YORK	82	04-83	2	PC		34,267	34,267
1	R01 GM30679-01 21320	LOFTFIELD, ROBERT B HOW POLYAMINES ENHANCE PRECISION OF AA-TRNA SYNTHESIS	UNIVERSITY OF NEW MEXICO ALBUQUERQUE	ALBUQUERQUE	NEW MEXICO	82	03-83	2	PC		73,820	100,501

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1	R01 GM30881-01 / 21320	YARUS, MICHAEL J / TRNA STRUCTURE/FUNCTION STUDIES VIA GENE CONSTRUCTION	UNIVERSITY OF COLORADO AT BOULDER	BOULDER	COLORADO	82	06-83	4	PC	155,506	210,890
1	R01 GM31259-01 / 21600	ITAKURA, KEIICHI / ISOLATION OF NUCLEIC ACIDS USING SYNTHETIC DNA AS PROBE	CITY OF HOPE RESEARCH INSTITUTE	DUARTE	CALIFORNIA	82	07-83	2	PC	79,750	121,577
7	R01 GM31367-01 / 22300	KOHLER, HEINZ / STRUCTURE OF THE MAJOR RED CELL MEMBRANE POLYPEPTIDE	ROSWELL PARK MEMORIAL INSTITUTE	BUFFALO	NEW YORK	82	03-83	0	PC	66,335	94,470
***	0	* CENTERS								0	0
***	128	NONCENTERS								9,500,753	13,702,832
***	128	TOTAL								9,500,753	13,702,832
5	R01 GM11598-18 / 11770	GOSSELIN, ROBERT E / DRUG EFFECTS ON SOLUTE TRANSPORT ACROSS EPITHELIA	DARTMOUTH COLLEGE	HANOVER	NEW HAMPSHIRE	82	05-83	0	PHRA	34,978	52,222
5	R01 GM16503-14 / 11850	FUJIMOTO, JAMES M / ALTERATION IN DRUG METABOLISM BY CERTAIN CARBAMATES	MEDICAL COLLEGE OF WISCONSIN	MILWAUKEE	WISCONSIN	82	11-82	2	PHRA	41,307	61,961
5	R01 GM19568-15 / 11850	LEVY, GERHARD / PHARMACOKINETICS OF SALICYLATES IN CHILDREN & RATS	STATE UNIVERSITY OF NEW YORK AT BUFFALO	BUFFALO	NEW YORK	82	06-83	0	PHRA	62,616	90,949
5	R01 GM20091-08 / 11770	LEVI, ROBERTO / CARDIAC DYSFUNCTIONS CAUSED BY HISTAMINE RELEASE	CORNELL UNIVERSITY MEDICAL CENTER	NEW YORK	NEW YORK	82	05-83	2	PHRA	95,593	141,478
5	R01 GM21310-08 / 11760	HOLTZMAN, JORDAN L / CYTOCHROME-REDUCTASE ACTIVATION IN HYDROXYLATION	UNIVERSITY OF MINNESOTA OF MNPLS-ST PAUL	MINNEAPOLIS	MINNESOTA	82	07-83	0	PHRA	63,819	78,497

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5	R01 GM22209-08 11880	BLASCHKE, TERRENCE F KINETICS OF DRUG-DRUG AND DRUG-DISEASE INTERACTIONS	STANFORD UNIVERSITY	STANFORD	82 CALIFORNIA	08-83	1	71,092	PHRA 120,145
2	R01 GM22369-07 11750	JACKSON, MICHAEL J DRUG TRANSPORT IN THE GI TRACT AND OTHER EPITHELIA	GEORGE WASHINGTON UNIVERSITY	WASHINGTON	82 DIST OF COL	06-83	4	66,645	PHRA 105,417
5	R01 GM22688-06 11760	KUPFER, DAVID PROSTAGLANDINS: INTERACTIONS WITH MONOOXYGENASES	WORCESTER FDN FOR EXPER BIOLOGY	SHREWSBURY	81 MASSACHUSETTS	03-83	0	63,467	PHRA 97,446
5	R01 GM23029-06 13200	KAMINSKY, LAURENCE S HEPATIC MICROSOMAL ENZYME METABOLISM OF ANESTHETICS	NEW YORK STATE DEPARTMENT OF HEALTH	ALBANY	81 NEW YORK	03-83	0	31,502	PHRA 45,031
5	R01 GM23197-06 11770	COOK, CLARENCE E PHARMACOLOGY OF STEROSELECTIVE RADIOIMMUNOASSAY	RESEARCH TRIANGLE INSTITUTE	RESEARCH TRIANGL	81 NORTH CAROLINA	12-82	0	60,792	PHRA 113,648
5	R01 GM24211-06 11880	JUSKO, WILLIAM J AGE AND DISEASE IN DRUG DISPOSITION	STATE UNIVERSITY OF NEW YORK AT BUFFALO	BUFFALO	82 NEW YORK	06-83	1	77,488	PHRA 99,064
5	R01 GM24612-05 11750	HUNT, C ANTHONY LIPOSOMES IN VIVO: FOR DRUGS AND PRODRUGS	UNIVERSITY OF CALIFORNIA SAN FRANCISCO	SAN FRANCISCO	82 CALIFORNIA	02-83	3	51,372	PHRA 67,297
5	R01 GM24707-03 11880	CORREIA, MARIA A REGULATION OF INTESTINAL METABOLISM OF XENOBIOTICS	UNIVERSITY OF CALIFORNIA SAN FRANCISCO	SAN FRANCISCO	81 CALIFORNIA	11-82	0	55,695	PHRA 72,960
5	R01 GM24844-05 11860	HUH, MARTIN M PHARMACOLOGY OF BIOGENIC AMINE METHYLTRANSFERASES	ROCKEFELLER UNIVERSITY	NEW YORK	81 NEW YORK	03-83	0	59,541	PHRA 88,002
5	R01 GM25027-05 11780	CHUNG, LELAND W NEONATAL IMPRINTING MECHANISMS AND DEVELOPMENT	UNIVERSITY OF COLORADO AT BOULDER	BOULDER	82 COLORADO	07-83	1	66,739	PHRA 93,368
5	R01 GM25136-05 11760	TRAGER, WILLIAM F PRODUCT RATIOS AND MICROSOMAL MULTIPLICITY	UNIVERSITY OF WASHINGTON	SEATTLE	82 WASHINGTON	03-83	1	53,555	PHRA 71,371
5	R01 GM25373-03 11860	NELSON, WENDEL L METABOLISM OF BETA-ADRENERGIC BLOCKERS-CHEMICAL ASPECTS	UNIVERSITY OF WASHINGTON	SEATTLE	81 WASHINGTON	11-82	0	39,757	PHRA 52,934

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2	R01 GM25418-04A1 11890	NELSON, SIDNEY D ALTERATION OF METABOLISM BY STRUCTURAL MODIFICATION	UNIVERSITY OF WASHINGTON	SEATTLE WASHINGTON	82	03-83	2	PHRA 55,666	73,079
5	R01 GM25515-05 11760	ORTIZ DE MONTELLANO, PAUL R SELECTIVE DESTRUCTION OF CYTOCHROME P-450 BY DRUGS	UNIVERSITY OF CALIFORNIA SAN FRANCISCO	SAN FRANCISCO CALIFORNIA	82	06-83	1	PHRA 68,261	86,477
5	R01 GM25781-03 11890	JOLLOW, DAVID J ACETAMINOPHEN-INDUCED LIVER NECROSIS	MEDICAL UNIVERSITY OF SOUTH CAROLINA	CHARLESTON SOUTH CAROLINA	81	11-82	0	PHRA 89,337	117,031
5	R01 GM25807-03 11880	OIE, SVEIN DRUG DISPOSITION IN RENAL FAILURE PATIENTS	UNIVERSITY OF CALIFORNIA SAN FRANCISCO	SAN FRANCISCO CALIFORNIA	81	11-82	0	PHRA 44,193	57,893
5	R01 GM26024-03 11860	CHO, ARTHUR K NITROGEN OXIDATION IN DRUG METABOLISM	UNIVERSITY OF CALIFORNIA LOS ANGELES	LOS ANGELES CALIFORNIA	81	01-83	0	PHRA 60,561	79,335
5	R01 GM26221-03 11760	TEPHLY, THOMAS R MORPHINE AND ESTROGEN GLUCURONYLTRANSFERASE ACTIVITIES	UNIVERSITY OF IOWA	IOWA CITY IOWA	81	03-83	0	PHRA 44,748	61,752
5	R01 GM26222-03 11880	SHAPIRO, BERNARD H DEVELOPMENTAL ORGANIZERS OF DRUG METABOLISM	UNIVERSITY OF PENNSYLVANIA	PHILADELPHIA PENNSYLVANIA	81	03-83	0	PHRA 57,190	94,364
5	R01 GM26227-03 11750	YATVIN, MILTON B ENGINEERING OF LIPOSOMES TO RELEASE DRUG BY HYPERTHERMIA	UNIVERSITY OF WISCONSIN MADISON	MADISON WISCONSIN	82	07-83	0	PHRA 41,069	58,729
5	R01 GM26340-03 11870	MAGUIRE, MICHAEL E ROLE OF MAGNESIUM IN CELL RESPONSE TO HORMONE	CASE WESTERN RESERVE UNIVERSITY	CLEVELAND OHIO	82	03-83	0	PHRA 66,000	99,660
5	R01 GM26403-03 13200	MILLER, RONALD D PARALYSIS--ITS ANTAGONISM DURING SURGERY & ANESTHESIA	UNIVERSITY OF CALIFORNIA SAN FRANCISCO	SAN FRANCISCO CALIFORNIA	81	11-82	0	PHRA 32,935	43,145
2	R01 GM26556-04 11780	TOZER, THOMAS N FACTORS INFLUENCING SATURABLE FIRST-PASS METABOLISM	UNIVERSITY OF CALIFORNIA SAN FRANCISCO	SAN FRANCISCO CALIFORNIA	82	03-83	3	PHRA 91,734	106,064
2	R01 GM26676-04 11350	SHEINER, LEWIS B NEW WAYS TO INVESTIGATE AND FORECAST PHARMACOKINETICS	UNIVERSITY OF CALIFORNIA SAN FRANCISCO	SAN FRANCISCO CALIFORNIA	82	08-83	4	PHRA 115,390	146,661

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2	R01 GM26698-04 12300	LANGER, ROBERT S SURGICAL IMPLANTS FOR SUSTAINED MACROMOLECULAR RELEASE	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	CAMBRIDGE MASSACHUSETTS	82	06-83	2	PHRA 122,260	167,481
5	R01 GM27167-03 11850	BODOR, NICHOLAS S REDOX SYSTEMS FOR DELIVERY OF DRUGS TO THE BRAIN	UNIVERSITY OF FLORIDA	GAINESVILLE FLORIDA	82	11-82	0	PHRA 42,655	60,173
5	R01 GM27259-03 11760	SAENGER, PAUL H NON-INVASIVE METHODS FOR STUDY OF DRUG METABOLISM	MONTEFIORE HOSPITAL AND MEDICAL CENTER	NEW YORK NEW YORK	81	10-82	0	PHRA 75,043	86,418
5	R01 GM27378-03 11870	ROBISON, GEORGE A HORMONAL & NON-HORMONAL REGULATION OF ADENYLYL CYCLASE	UNIVERSITY OF TEXAS HLTH SCI CTR HOUSTON	HOUSTON TEXAS	82	11-82	0	PHRA 68,638	94,720
5	R01 GM27590-03 11860	POWIS, GARTH ROLE OF CYTOCHROME P-450 IN DRUG REDUCTION	MAYO FOUNDATION	ROCHESTER MINNESOTA	82	11-82	0	PHRA 82,441	106,705
5	R01 GM27780-03 11760	MANNERING, GILBERT J FUNCTIONS OF P-450-LINKED DRUG-METABOLIZING SYSTEMS	UNIVERSITY OF MINNESOTA OF MNPLS-ST PAUL	MINNEAPOLIS MINNESOTA	82	08-83	0	PHRA 118,471	164,675
5	R01 GM27801-02 11780	LINSCHEER, WILLEM G PROTECTION OF PROPYLTHIOURACIL AGAINST TOXIC HEPATITIS	UPSTATE MEDICAL CENTER	SYRACUSE NEW YORK	82	12-82	1	PHRA 86,782	103,201
5	R01 GM27802-03 11850	SCHOTT, HANS EFFECT OF ELECTROLYTES ON NONIONIC SURFACTANTS	TEMPLE UNIVERSITY	PHILADELPHIA PENNSYLVANIA	82	05-83	0	PHRA 25,835	39,528
5	R01 GM27820-03 11770	HARDEN, T KENDALL SYNTHESIS OF BETA-ADRENERGIC RECEPTORS	UNIVERSITY OF NORTH CAROLINA CHAPEL HILL	CHAPEL HILL NORTH CAROLINA	82	03-83	2	PHRA 74,693	104,271
5	R01 GM27924-03 11850	HAYTON, WILLIAM L RATE LIMITING BARRIERS IN INTESTINAL DRUG ABSORPTION	WASHINGTON STATE UNIVERSITY	PULLMAN WASHINGTON	82	01-84	0	PHRA 30,208	42,947
5	R01 GM28155-03 13200	FORD, DOUGLAS J SPECIES DIFFERENCES IN HALOTHANE HEPATOTOXICITY	UNIVERSITY OF CINCINNATI	CINCINNATI OHIO	82	06-83	0	PHRA 57,619	80,667
5	R01 GM28157-03 11780	WEINSHILBOUM, RICHARD M INHERITED VARIATIONS IN DRUG METABOLIZING ENZYMES	MAYO FOUNDATION	ROCHESTER MINNESOTA	82	06-83	2	PHRA 73,781	95,530

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5	R01 GM28158-03 11860	TYSON, CHARLES A COMPARATIVE IN VITRO METABOLIC SYSTEMS	SRI INTERNATIONAL	MENLO PARK CALIFORNIA	82	08-83	0	PHRA	54,605	110,724
5	R01 GM28171-02 11780	MANNERING, GILBERT J EFFECTS OF INTERFERON ON DRUG METABOLIZING SYSTEMS	UNIVERSITY OF MINNESOTA OF MNPLS-ST PAUL	MINNEAPOLIS MINNESOTA	82	08-83	1	PHRA	63,223	87,880
5	R23 GM28812-02 13250	CRONNELLY, ROY PHARMACOKINETICS/DYNAMICS OF MUSCLE RELAXANT ANTAGONISTS	UNIVERSITY OF CALIFORNIA SAN FRANCISCO	SAN FRANCISCO CALIFORNIA	82	03-83	1	PHRA	33,950	44,475
5	R01 GM29522-02 11770	PERKINS, JOHN P REGULATION OF B-ADRENERGIC RECEPTOR FUNCTION	UNIVERSITY OF NORTH CAROLINA CHAPEL HILL	CHAPEL HILL NORTH CAROLINA	82	06-83	3	PHRA	69,222	93,441
5	R01 GM29536-05 11770	HARDEN, T KENDALL MUSCARINIC RECEPTOR REGULATION OF ADENYLATE CYCLASE	UNIVERSITY OF NORTH CAROLINA CHAPEL HILL	CHAPEL HILL NORTH CAROLINA	82	03-83	1	PHRA	41,433	57,840
1	R01 GM29543-01A1 13420	BLOEDOW, DUANE C POSTBURN SERUM DRUG BINDING IN HUMANS	UNIVERSITY OF COLORADO AT BOULDER	BOULDER COLORADO	82	07-83	2	PHRA	40,759	55,526
1	R01 GM29571-01 HD 11780	MORISHIMA, HISAYO O DRUG RESPONSES IN FETAL IMMATURITY AND/OR ASPHYXIA	COLUMBIA UNIVERSITY	NEW YORK NEW YORK	82	03-83	2	PHRA	104,891	173,229
9	R01 GM29840-14 HL 11770	FLEMING, WILLIAM W MECHANISM OF NONSPECIFIC SUPERSENSITIVITY TO DRUGS	WEST VIRGINIA UNIVERSITY	MORGANTOWN WEST VIRGINIA	82	12-82	3	PHRA	77,351	106,591
1	R01 GM30163-01 11850	SZOKA, FRANCIS C CONTROLLED DISPOSITION OF LIPOSOMES	UNIVERSITY OF CALIFORNIA SAN FRANCISCO	SAN FRANCISCO CALIFORNIA	82	01-83	2	PHRA	92,960	121,778
1	R01 GM30546-01 AM 11880	JOLLOW, DAVID J ACETAMINOPHEN TOXICITY: EFFECTS OF DIABETES AND DIET	MEDICAL UNIVERSITY OF SOUTH CAROLINA	CHARLESTON SOUTH CAROLINA	82	04-83	2	PHRA	64,266	83,289
1	R01 GM30840-01 ES 11750	ZAKIM, DAVID METABOLISM OF DRUGS, TOXINS, & ENVIRONMENTAL POLLUTANTS	UNIVERSITY OF CALIFORNIA SAN FRANCISCO	SAN FRANCISCO CALIFORNIA	82	07-83	2	PHRA	63,634	77,017
1	R01 GM31155-01 HL 11770	WOLFE, BARRY B REGULATION OF MUSCARINIC CHOLINERGIC RECEPTORS	UNIVERSITY OF PENNSYLVANIA	PHILADELPHIA PENNSYLVANIA	82	07-83	2	PHRA	61,719	92,216

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1	R01 GM31206-01 11770	HOFFMAN, BRIAN B ALPHA2 RECEPTOR MEDIATED INHIBITION OF ADENYLATE CYCLASE	STANFORD UNIVERSITY	STANFORD CALIFORNIA	82	07-83	2	PHRA	101,646	137,865
7	R01 GM31568-01 11750	AMIDON, GORDON L DRUG ABSORPTION THROUGH MEMBRANE METABOLISM	UNIVERSITY OF KANSAS LAWRENCE	LAWRENCE KANSAS	82	06-83	0	PHRA	36,034	45,695
7	R01 GM31780-01 11890	SPEEG, KERMIT V HEPATIC, CEREBRAL AND RENAL SIDE EFFECTS OF CIMETIDINE	UNIVERSITY OF TEXAS HLTH SCI CTR SAN ANT	SAN ANTONIO TEXAS	82	01-83	1	PHRA	58,163	79,102
***	0	* CENTERS					0		3,585,324	0 4,988,964
***	56	NONCENTERS							3,585,324	4,988,964
***	56	TOTAL								
5	R01 GM03545-27 22300	HUF, ERNST G METABOLISM AND ACTIVE ION TRANSPORT IN SKIN	VIRGINIA COMMONWEALTH UNIVERSITY	RICHMOND VIRGINIA	82	06-83	0	PHY	10,968	16,792
5	R01 GM11494-18 22300	WILLIS, JOHN S ION TRANSPORT IN CELLS OF HIBERNATING MAMMALS	UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN	URBANA ILLINOIS	82	11-82	0	PHY	63,722	90,740
5	R01 GM14772-15 22300	DIAMOND, JARED M WATER TRANSPORT ACROSS EPITHELIAL MEMBRANES	UNIVERSITY OF CALIFORNIA LOS ANGELES	LOS ANGELES CALIFORNIA	82	03-83	1	PHY	96,460	125,898
5	R01 GM15858-15 22300	SLAYMAN, CLIFFORD L, JR KINETICS AND REGULATION OF H+ TRANSPORT IN NEUROSPORA	YALE UNIVERSITY	NEW HAVEN CONNECTICUT	82	04-83	3	PHY	104,722	165,461
2	R01 GM17536-13 13200	FEINSTEIN, MAURICE B MECHANISM OF ACTION OF ANESTHETICS	UNIVERSITY OF CONNECTICUT HEALTH CENTER	FARMINGTON CONNECTICUT	82	12-82	4	PHY	81,519	112,803

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5	R01 GM18819-09 22300	MACEY, ROBERT I CALCIUM & MAGNESIUM IN MEMBRANE TRANSPORT MAINTENANCE	UNIVERSITY OF CALIFORNIA	BERKELEY BERKELEY	82 CALIFORNIA	11-82	2	PHY	54,400	71,264
5	R01 GM21342-09 22300	ANDERSEN, OLAF S CHANNEL-MEDIATED ION TRANSPORT ACROSS LIPID BILAYERS	CORNELL UNIVERSITY MEDICAL CENTER	NEW YORK	82 NEW YORK	05-83	3	PHY	84,072	124,427
5	R01 GM23731-06 22300	PIERCE, SIDNEY K CELLULAR WATER BALANCE: THE INVERTEBRATE MECHANISM	UNIVERSITY OF MARYLAND COLLEGE PK CAMPUS	COLLEGE PARK	82 MARYLAND	03-83	0	PHY	47,331	67,210
5	R01 GM24168-06 22300	KUTCHAI, HOWARD C RED CELLS AND CHICK HEART: TRANSPORT AND FLUIDITY	UNIVERSITY OF VIRGINIA CHARLOTTESVILLE	CHARLOTTESVILLE	82 VIRGINIA	07-83	0	PHY	45,720	66,294
5	R01 GM24507-04 22300	JACQUEZ, JOHN A IDENTIFICATION OF TRANSPORT ASSOCIATED PROTEINS	UNIVERSITY OF MICHIGAN AT ANN ARBOR	ANN ARBOR	81 MICHIGAN	12-82	0	PHY	33,857	53,494
2	R01 GM24749-13 22300	EISENMAN, GEORGE ION PERMEATION IN CHANNELS, CARRIERS AND NERVES	UNIVERSITY OF CALIFORNIA LOS ANGELES	LOS ANGELES	82 CALIFORNIA	06-83	4	PHY	58,888	78,096
2	R01 GM24866-04A1 13200	YEH, JAY Z MOLECULAR MECHANISM OF LOCAL ANESTHETIC ACTION	NORTHWESTERN UNIVERSITY	CHICAGO	82 ILLINOIS	06-83	2	PHY	50,401	63,791
5	R01 GM25002-05 22300	ZADUNAISKY, JOSE A CHLORIDE TRANSPORT AND OSMOREGULATION	NEW YORK UNIVERSITY	NEW YORK	82 NEW YORK	03-83	0	PHY	53,891	80,567
5	R01 GM25277-05 22300	TOSTESON, DANIEL C ION TRANSPORT ACROSS LIPID BILAYER MEMBRANES	HARVARD UNIVERSITY	BOSTON	82 MASSACHUSETTS	06-83	2	PHY	72,438	140,876
5	R01 GM25686-05 22300	TOSTESON, DANIEL C MEMBRANES IN HYPERTENSION AND OTHER SYNDROMES	HARVARD UNIVERSITY	BOSTON	82 MASSACHUSETTS	06-83	0	PHY	78,168	153,053
2	R01 GM25938-04A1 22300	LEVITT, DAVID G BEHAVIOR AND EXISTENCE OF CELL MEMBRANE PORES	UNIVERSITY OF MINNESOTA OF MNPLS-ST PAUL	MINNEAPOLIS	82 MINNESOTA	06-83	2	PHY	53,843	71,743
5	R01 GM26287-03 22300	MOFFETT, DAVID F POTASSIUM TRANSPORT BY INSECT MIDGUT	WASHINGTON STATE UNIVERSITY	PULLMAN	81 WASHINGTON	09-82	0	PHY	29,637	42,974

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5	R01 GM26554-05 22300	HEINZ, ERICH MECHANISM AND FUNCTION OF PROTON FLOWS IN ANIMAL CELLS	CORNELL UNIVERSITY MEDICAL CENTER	NEW YORK	82 NEW YORK	08-83	1	51,973	PHY 76,920
5	R01 GM27042-06 22300	CIANI, SERGIO SELECTIVE ION PERMEATION IN EXCITABLE CELLS	UNIVERSITY OF CALIFORNIA LOS ANGELES	LOS ANGELES	82 CALIFORNIA	11-82	0	54,000	PHY 70,120
5	R01 GM27260-03 22300	BAUMANN, GILBERT EXPERIMENTAL TESTING OF THE MODULAR CHANNEL CONCEPT	DUKE UNIVERSITY	DURHAM	82 NORTH CAROLINA	06-83	0	32,600	PHY 48,900
5	R01 GM28450-02 22300	COLOMBINI, MARCO PROBING THE MECHANISM OF A VOLTAGE DEPENDENT CHANNEL	UNIVERSITY OF MARYLAND COLLEGE PK CAMPUS	COLLEGE PARK	82 MARYLAND	12-82	1	42,971	PHY 60,389
5	R01 GM28643-02 22300	JORDAN, PETER C ELECTROSTATIC MODELLING OF ION PORES	BRANDEIS UNIVERSITY	WALTHAM	82 MASSACHUSETTS	12-82	1	31,172	PHY 50,499
5	R01 GM28839-03 22300	FREEDMAN, JEFFREY C ELECTROPHYSIOLOGY OF HUMAN RED BLOOD CELLS	UPSTATE MEDICAL CENTER	SYRACUSE	82 NEW YORK	07-83	0	27,335	PHY 39,665
5	R01 GM28844-02 22300	GUTKNECHT, JOHN W ACID/BASE TRANSPORT THROUGH LIPID BILAYER MEMBRANES	DUKE UNIVERSITY	DURHAM	82 NORTH CAROLINA	03-83	1	31,500	PHY 47,250
5	R01 GM28992-02 22300	LATORRE, RAMON IONIC CHANNEL FORMATION MECHANISMS IN LIPID BILAYERS	HARVARD UNIVERSITY	BOSTON	82 MASSACHUSETTS	03-83	1	36,594	PHY 71,651
5	R01 GM29099-02 22300	KARNAKY, KARL J, JR A NEW MODEL SYSTEM TO STUDY CHLORIDE TRANSPORT	UNIVERSITY OF TEXAS HLTH SCI CTR HOUSTON	HOUSTON	82 TEXAS	12-82	1	42,621	PHY 58,817
5	R01 GM29210-05 22300	FINKELSTEIN, ALAN INTERACTION OF MODEL SYNAPTIC VESICLES WITH LIPID BILAY	YESHIVA UNIVERSITY	NEW YORK	82 NEW YORK	12-82	3	98,805	PHY 183,777
5	R01 GM29256-11 13410	MANDEL, LAZARO J MECHANISMS OF ACTIVE AND PASSIVE SOLUTE TRANSPORT	DUKE UNIVERSITY	DURHAM	82 NORTH CAROLINA	08-83	0	54,124	PHY 80,686
5	R01 GM29263-03 22300	RAYNER, MARTIN D NA+-PORES: PHOTOAFFINITY LABELS FOR SUB-UNIT FUNCTION	UNIVERSITY OF HAWAII AT MANOA	HONOLULU	82 HAWAII	08-83	0	47,064	PHY 66,360

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5	R01 GM30376-02 22400	BEZANILLA, FRANCISCO J ELECTROPHYSIOLOGICAL STUDIES OF VOLTAGE GATED CHANNELS	UNIVERSITY OF CALIFORNIA	LOS ANGELES LOS ANGELES CALIFORNIA	82	07-83	3	PHY	71,610	95,970
5	R01 GM30377-02 22300	NONNER, WOLFGANG F MOLECULAR MECHANISMS OF GATING IN IONIC CHANNELS	UNIVERSITY OF MIAMI	MIAMI FLORIDA	82	07-83	1	PHY	80,173	154,126
9	R01 GM30657-04A1 HL 22300	HALL, JAMES E VOLTAGE-DEPENDENT CONDUCTANCE IN MEMBRANES	UNIVERSITY OF CALIFORNIA	IRVINE IRVINE CALIFORNIA	82	03-83	2	PHY	59,176	71,631
5	R01 GM30754-02 22300	GUNN, ROBERT B MECHANISMS AND CELLULAR FUNCTIONS OF ION TRANSPORTS	EMORY UNIVERSITY	ATLANTA GEORGIA	82	08-83	0	PHY	77,469	115,104
1	R01 GM31039-01 22300	COHEN, FREDRIC S ION TRANSPORT AND PHYSIOLOGY OF A-ADRENERGIC STIMULATION	RUSH-PRESBYTERIAN-ST LUKES MEDICAL CTR	CHICAGO ILLINOIS	82	06-83	2	PHY	75,700	93,520
1	R01 GM31074-01 22300	DEGNAN, KEVIN J PHYSIOLOGY OF CHLORIDE SECRETION	BROWN UNIVERSITY	PROVIDENCE RHODE ISLAND	82	06-83	2	PHY	70,961	101,356
1	R01 GM31191-01 AM 22300	THOMPSON, STEPHEN M ELECTROPHYSIOLOGY OF PROTON TRANSPORT BY EPITHELIA	UNIVERSITY OF TEXAS HLTH SCI CTR HOUSTON	HOUSTON TEXAS	82	06-83	2	PHY	49,393	59,800
***	0	* CENTERS							0	0
***	36	NONCENTERS							2,055,278	3,072,024
***	36	TOTAL							2,055,278	3,072,024
5	R01 GM22328-07 22300	TOBACK, FREDERICK G MEMBRANES AND PHOSPHOLIPIDS IN RENAL HYPERPLASIA	UNIVERSITY OF CHICAGO	CHICAGO ILLINOIS	81	03-83	0	PTHA	96,540	153,294

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3	R01 GM22328-07S1 22300	TOBACK, FREDERICK G MEMBRANES AND PHOSPHOLIPIDS IN RENAL HYPERPLASIA	UNIVERSITY OF CHICAGO	CHICAGO ILLINOIS	82	03-83	0	PTHA		55,035	93,009
5	R01 GM27589-02 22100	CHAN, TEH-SHENG MOLECULAR PATHOLOGY OF INHERITED IMMUNODEFICIENCY	UNIVERSITY OF TEXAS MED BR GALVESTON	GALVESTON TEXAS	82	01-83	1	PTHA		46,818	63,204
***	0	* CENTERS								0	0
***	2	NONCENTERS								198,393	309,507
***	2	TOTAL								198,393	309,507
5	R01 GM22359-07 21600	BASERGA, RENATO L CHROMOSOMAL PROTEINS IN CELL PROLIFERATION	TEMPLE UNIVERSITY	PHILADELPHIA PENNSYLVANIA	82	02-83	1	PTHB		48,386	74,031
2	R01 GM23750-07 CA 22200	REDDY, JANARDIAN K BIOLOGIC STUDIES WITH LIVER PEROXISOME PROLIFERATORS	NORTHWESTERN UNIVERSITY	CHICAGO ILLINOIS	82	06-83	4	PTHB		110,306	146,427
5	R01 GM29040-02 22200	DAMJANOV, IVAN ACTIVATION OF PRIMORDIAL GERM CELLS TO FORM TERATOMAS	HAHNEMANN MED COL & HOSP OF PHILADELPHIA	PHILADELPHIA PENNSYLVANIA	82	04-83	1	PTHB		55,467	85,704
***	0	* CENTERS								0	0
***	3	NONCENTERS								214,159	306,162
***	3	TOTAL								214,159	306,162

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5	P50 GM12675-18	TEPHLY, THOMAS R	UNIVERSITY OF IOWA			82	11-82	1	PTR		
*	11300	BIOCHEMICAL TOXICOLOGY AND PHARMACOLOGY		IOWA CITY	IOWA					539,000	740,020
3	P50 GM12675-18S1	TEPHLY, THOMAS R	UNIVERSITY OF IOWA			82	11-82	1	PTR		
*	11300	BOCHEMICAL TOXICOLOGY AND PHARMACOLOGY		IOWA CITY	IOWA					74,182	102,371
5	P50 GM15904-15	KITZ, RICHARD J	HARVARD UNIVERSITY			82	12-82	1	PTR		
*	13100	ANAESTHESIOLOGY CENTER FOR RESEARCH AND TEACHING		BOSTON	MASSACHUSETTS					253,775	388,016
5	R01 GM16488-15	ESTABROOK, RONALD W	UNIVERSITY OF TEXAS HLTH SCI CTR DALLAS			82	08-83	0	PTR		
	11360	HEPATIC MICROSOMAL DRUG OXIDATION		DALLAS	TEXAS					119,723	161,515
5	P50 GM20387-10	GAFFNEY, THOMAS E	MEDICAL UNIVERSITY OF SOUTH CAROLINA			82	01-83	0	PTR		
*	11300	INTERDISCIPLINARY PROGRAM IN PHARMACOLOGY/TOXICOLOGY		CHARLESTON	SOUTH CAROLINA					423,193	553,453
5	P50 GM20852-09	LEVY. GERHARD	STATE UNIVERSITY OF NEW YORK AT BUFFALO			82	12-82	1	PTR		
*	11700	CLINICAL PHARMACOKINETICS AND BIOPHARMACEUTICS		BUFFALO	NEW YORK					251,587	363,342
2	P01 GM22220-06	GOLDBERG, LEON I	UNIVERSITY OF CHICAGO			82	11-82	2	PTR		
	11700	CLINICAL PHARMACOLOGY CENTER		CHICAGO	ILLINOIS					229,471	351,662
2	P01 GM22365-06A1	LONG, JOHN P	UNIVERSITY OF IOWA			82	04-83	2	PTR		
	11900	STRUCTURE ACTIVITY STUDIES OF PHARMACOLOGIC AGENTS		IOWA CITY	IOWA					270,000	363,480
2	P01 GM22371-07	ATKINSON, ARTHUR J, JR	NORTHWESTERN UNIVERSITY			82	03-83	2	PTR		
	11700	CLINICAL PHARMACOLOGY OF COMMONLY USED DRUGS		CHICAGO	ILLINOIS					137,109	189,210
2	P01 GM24483-04	MARSHALL, GARLAND R	WASHINGTON UNIVERSITY			82	11-82	2	PTR		
	11900	COMPUTER-AIDED DRUG DESIGN		SAINT LOUIS	MISSOURI					345,000	509,826
5	P01 GM26611-04	MITCHELL, JERRY R	BAYLOR COLLEGE OF MEDICINE			82	07-83	0	PTR		
	11300	MOLECULAR BASIS OF HUMAN DRUG TOXICITY		HOUSTON	TEXAS					259,533	352,965
5	P50 GM26691-04	BENET, LESLIE Z	UNIVERSITY OF CALIFORNIA SAN FRANCISCO			82	07-83	1	PTR		
*	11300	PHARMACOKINETICS/PHARMACODYNAMICS		SAN FRANCISCO	CALIFORNIA					235,605	297,959

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5	R01 GM29042-03 / 11770	ROSEN, ORA M / USE OF MACROPHAGE-LIKE CELL LINES	YESHIVA UNIVERSITY	NEW YORK / NEW YORK	82	07-83	0	PTR	129,292	238,075
***	6	* CENTERS							1,777,342	2,445,161
***	6	NONCENTERS							1,490,128	2,166,733
***	12	TOTAL							3,267,470	4,611,894
5	R01 GM09901-21 / 21250	HANAWALT, PHILIP C / REPLICATION AND REPAIR OF GENETIC MATERIAL	STANFORD UNIVERSITY	STANFORD / CALIFORNIA	82	06-83	3	RAD	99,839	157,746
5	R01 GM11014-22 / 21250	HOWARD-FLANDERS, PAUL / CROSSLINKING OF NUCLEOPROTEINS BY RADIATION	YALE UNIVERSITY	NEW HAVEN / CONNECTICUT	82	11-82	3	RAD	68,545	105,604
5	R01 GM13557-16 / 21250	POWERS, EDWARD L / PHYSICO-CHEMICAL STUDIES OF RADIATION EFFECTS IN CELLS	UNIVERSITY OF TEXAS AUSTIN	AUSTIN / TEXAS	82	03-83	3	RAD	85,332	114,148
5	R01 GM16547-17 / 21250	RUPERT, CLAUD S / REPAIR OF RADIATION-DAMAGED NUCLEIC ACID	UNIVERSITY OF TEXAS DALLAS	RICHARDSON / TEXAS	82	03-83	0	RAD	87,366	117,944
5	R01 GM16620-13 / 21250	DEERING, REGINALD A / DNA REPAIR IN SLIME MOLD	PENNSYLVANIA STATE UNIVERSITY UNIV PARK	UNIVERSITY PARK / PENNSYLVANIA	82	04-83	2	RAD	93,658	125,047
2	R01 GM19261-10A1 / 21250	PRAKASH, LOUISE / REPAIR OF DNA DAMAGED BY UV IRRADIATION IN YEAST	UNIVERSITY OF ROCHESTER	ROCHESTER / NEW YORK	82	11-82	4	RAD	64,597	109,905
5	R01 GM21788-08 / 21250	BOCKRATH, RICHARD C / RADIATION INDUCED CELLULAR MUTAGENESIS AND DNA REPAIR	INDIANA UNIV-PURDUE UNIV AT INDIANAPOLIS	INDIANAPOLIS / INDIANA	82	01-83	1	RAD	43,403	62,060

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5	R01 GM21858-08 / 21250	LAWRENCE, CHRISTOPHER W / RADIATION MUTAGENESIS AND REPAIR IN SACCHAROMYCES	UNIVERSITY OF ROCHESTER	ROCHESTER / NEW YORK	82	01-83	3	RAD	101,624	152,436
5	R01 GM23526-06 / 21600	SHETLAR, MARTIN D / PHOTOINDUCED DNA-PROTEIN CROSS-LINKING IN CHROMATIN	UNIVERSITY OF CALIFORNIA SAN FRANCISCO	SAN FRANCISCO / CALIFORNIA	82	03-83	1	RAD	51,742	66,666
5	R01 GM23656-06 / 11920	BIELSKI, BENON H / BIOLOGICAL SUPEROXIDE RADICAL MECHANISMS	ASSOCIATED UNIV-BROOKHAVEN NATL LAB	UPTON / NEW YORK	82	12-82	0	RAD	57,955	90,928
5	R01 GM24994-04 / 12910	O'BRIEN, WILLIAM D, JR / ULTRASONIC PROPAGATION PROPERTIES IN INTACT TISSUE	UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN	URBANA / ILLINOIS	81	12-82	0	RAD	96,636	126,206
5	R01 GM26484-03 / 22200	RUSTAD, RONALD C / CELL CYCLE DEPENDENT CHANGES IN RADIATION SENSITIVITY	CASE WESTERN RESERVE UNIVERSITY	CLEVELAND / OHIO	81	03-83	0	RAD	46,609	73,294
5	R01 GM28351-02 / 21250	CALKINS, JOHN / ACTION SPECTRA OF GENETIC TOXICITIES OF UV RADIATIONS	UNIVERSITY OF KENTUCKY	LEXINGTON / KENTUCKY	81	12-82	0	RAD	42,080	59,122
***	0	* CENTERS							0	0
***	13	NONCENTERS							939,386	1,361,106
***	13	TOTAL							939,386	1,361,106
5	R01 GM19363-19 / 22200	GERHART, JOHN C / STUDIES OF CELLULAR REGULATORY MECHANISMS	UNIVERSITY OF CALIFORNIA BERKELEY	BERKELEY / CALIFORNIA	82	08-83	1	REB	116,975	161,939
5	R01 GM29224-03 / 21750	HECHT, NORMAN B / GENE EXPRESSION DURING SPERMATOGENESIS	TUFTS UNIVERSITY	MEDFORD / MASSACHUSETTS	82	08-83	0	REB	46,985	76,586
***	0	* CENTERS							0	0
***	2	NONCENTERS							163,960	238,525
***	2	TOTAL							163,960	238,525

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5	R01 GM08209-18 12910	NYBORG, WESLEY L BIOPHYSICAL BASIS FOR THRESHOLDS IN BIO-ULTRASOUND	UNIVERSITY OF VERMONT & ST AGRIC COLLEGE	BURLINGTON VERMONT	82	06-83	0	RNM	106,704	157,396
5	R01 GM09933-20 12910	CARSTENSEN, EDWIN L INTERACTION OF ULTRASOUND WITH BIOLOGICAL MATERIAL	UNIVERSITY OF ROCHESTER	ROCHESTER NEW YORK	82	04-83	2	RNM	70,540	119,780
2	R01 GM12281-19 12910	DUNN, FLOYD ULTRASONIC ABSORPTION BY BIOLOGICAL MATERIALS	UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN	URBANA ILLINOIS	82	08-83	4	RNM	68,512	93,745
5	R01 GM20661-09 12910	SIKOV, MELVIN R EFFECT OF EXPOSURE OF THE PRENATAL RAT TO ULTRASOUND	PACIFIC NORTHWEST LABORATORIES	RICHLAND WASHINGTON	82	03-83	1	RNM	98,305	170,628
5	R01 GM22338-06 12910	GREENFIELD, MOSES A IN VIVO BONE STUDY USING ULTRASOUND/PHOTON ABSORPTION	UNIVERSITY OF CALIFORNIA LOS ANGELES	LOS ANGELES CALIFORNIA	82	11-82	0	RNM	25,181	32,987
5	R01 GM22680-08 12910	MILLER, MORTON W BIOPHYSICAL BASES OF PULSED ULTRASOUND BIOEFFECTS	UNIVERSITY OF ROCHESTER	ROCHESTER NEW YORK	82	04-83	2	RNM	88,782	154,481
5	R01 GM26850-03 12910	LIZZI, FREDERIC L ADVANCED CLINICAL ULTRASONIC TISSUE CHARACTERIZATION	RIVERSIDE RESEARCH INSTITUTE	NEW YORK NEW YORK	82	01-83	1	RNM	218,412	285,504
5	R01 GM27755-03 12910	RILEY, WARD A, JR OPTICAL DIFFRACTION ANALYSIS OF PULSED ULTRASOUND	WAKE FOREST UNIVERSITY	WINSTON-SALEM NORTH CAROLINA	82	06-83	0	RNM	55,620	74,586
5	R01 GM28213-03 12400	SWANSON, CURTIS J LIQUID CRYSTAL THERMOGRAPHY OF CELL HEAT PRODUCTION	WAYNE STATE UNIVERSITY	DETROIT MICHIGAN	82	06-83	0	RNM	11,963	19,175
5	R01 GM28562-02 12910	EDMONDS, PETER D MECHANISMS OF BIOEFFECTS OF ULTRASONIC RADIATION	SRI INTERNATIONAL	MENLO PARK CALIFORNIA	82	01-83	1	RNM	72,083	139,458
1	R01 GM29106-01 FD 12910	DROST, CORNELIS J ULTRASOUND INTENSITY METER	CORNELL UNIVERSITY ITHACA	ITHACA NEW YORK	81	03-83	0	RNM	51,569	76,378
5	R01 GM29153-02 12910	FRANKLIN, DEAN ULTRASONIC INSTRUMENTATION DEVELOPMENT	UNIVERSITY OF MISSOURI COLUMBIA	COLUMBIA MISSOURI	82	03-83	1	RNM	63,807	84,739

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1	R01 GM30419-01 12910	APFEL, ROBERT E CELL CHARACTERIZATION AND DEFORMATION WITH ULTRASOUND	YALE UNIVERSITY	NEW HAVEN CONNECTICUT	82	04-83	2	RNM	56,961	83,934
1	R01 GM30481-01 12910	O'BRIEN, WILLIAM D, JR THEORETICAL ULTRASONIC DOSIMETRY	UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN	URBANA ILLINOIS	82	04-83	2	RNM	26,641	35,181
5	R01 GM30521-02 12910	KREMKAU, FREDERICK W BIOMOLECULAR ABSORPTION OF ULTRASOUND	YALE UNIVERSITY	NEW HAVEN CONNECTICUT	82	12-82	1	RNM	52,064	78,781
1	R01 GM30522-01 12910	ZAGZEBSKI, JAMES A ULTRASONIC SCATTER IN SOFT TISSUE PHANTOMS	UNIVERSITY OF WISCONSIN MADISON	MADISON WISCONSIN	82	04-83	2	RNM	81,949	103,010
1	R01 GM30593-01 12910	GOSS, STEPHEN A NONLINEAR ULTRASOUND PROPAGATION IN BIOLOGICAL TISSUE	INDIANAPOLIS CENTER FOR ADVANCED RES	INDIANAPOLIS INDIANA	82	06-83	2	RNM	35,172	62,703
1	R01 GM30890-01 12910	GREEN, PHILIP S ORTHOGRAPHIC ULTRASONIC TRANSMISSION IMAGING	SRI INTERNATIONAL	MENLO PARK CALIFORNIA	82	07-83	2	RNM	43,865	84,994
1	R01 GM31088-01 12910	FORSTER, FRED K ULTRASONIC ASSESSMENT OF WOUND HEALING AND BURN TRAUMA	UNIVERSITY OF WASHINGTON	SEATTLE WASHINGTON	82	07-83	2	RNM	111,422	141,363
***	0	* CENTERS							0	0
***	19	NONCENTERS							1,339,552	1,998,823
***	19	TOTAL							1,339,552	1,998,823
5	R01 GM17158-11 13200	VAN DYKE, RUSSELL A METABOLISM OF VOLATILE ANESTHETICS	MAYO FOUNDATION	ROCHESTER MINNESOTA	81	03-83	0	SAT	86,247	113,076

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2	R01 GM17959-10 13900	MERYMAN, HAROLD T PRESERVATION OF ORGANS BY FREEZING	AMERICAN NATIONAL RED CROSS	WASHINGTON DIST OF COL	82	02-83	2	SAT	93,456	158,735
5	R01 GM19328-11 13420	LEVENSON, STANLEY M BURN DEBRIDEMENT: CHEMICAL, ENZYMATIC	YESHIVA UNIVERSITY	NEW YORK NEW YORK	82	06-83	2	SAT	111,114	205,612
5	R01 GM20298-09 13420	COHEN, IRWIN K COLLAGEN METABOLISM IN WOUND REPAIR AND KELOID	VIRGINIA COMMONWEALTH UNIVERSITY	RICHMOND VIRGINIA	82	11-82	2	SAT	73,340	112,050
5	R01 GM21447-08 13410	SABA, THOMAS M SYSTEMIC HOST DEFENSE FOLLOWING TRAUMA	ALBANY MEDICAL COLLEGE	ALBANY NEW YORK	82	11-82	1	SAT	55,094	88,150
5	R01 GM21729-23 13200	GRONERT, GERALD A METABOLIC EFFECTS OF ANESTHESIA AND SURGERY	MAYO FOUNDATION	ROCHESTER MINNESOTA	82	11-82	2	SAT	92,416	124,979
5	R01 GM22113-06 13200	KENDIG, JOAN J MECHANISM OF LOCAL ANESTHETIC CONDUCTION BLOCK	STANFORD UNIVERSITY	STANFORD CALIFORNIA	82	03-83	0	SAT	42,413	67,013
2	R01 GM22746-07 13200	MAZZE, RICHARD I NEPHROTOXICITY OF FLUORINATED ANESTHETICS	STANFORD UNIVERSITY	STANFORD CALIFORNIA	82	06-83	2	SAT	44,444	64,444
5	R01 GM23000-07 13420	SHIRES, GEORGE T EVALUATION OF SALINE SOLUTIONS IN THERAPY OF SHOCK	CORNELL UNIVERSITY MEDICAL CENTER	NEW YORK NEW YORK	82	06-83	3	SAT	81,114	119,333
5	R01 GM23946-06 13420	YANNAS, IOANNIS V DESIGN AND EVALUATION OF AN ARTIFICIAL SKIN	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	CAMBRIDGE MASSACHUSETTS	82	03-83	0	SAT	115,578	162,010
5	R01 GM24028-05 13410	SAELINGER, CATHARINE B PATHOGENESIS OF PSEUDOMONAS IN THERMAL INJURY	UNIVERSITY OF CINCINNATI	CINCINNATI OHIO	82	03-83	2	SAT	60,909	85,273
5	R01 GM24206-05 13420	BLACKBURN, GEORGE L BRANCHED CHAIN AMINO ACID FEEDING DURING INJURY	NEW ENGLAND DEACONESS HOSPITAL	BOSTON MASSACHUSETTS	82	07-83	3	SAT	86,288	143,900
5	R01 GM24313-06 13200	MILLER, EDWARD D, JR ANESTHETIC AGENTS--RENIN--HYPERTENSION	UNIVERSITY OF VIRGINIA CHARLOTTESVILLE	CHARLOTTESVILLE VIRGINIA	82	06-83	0	SAT	48,919	70,933

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2	R01 GM24481-05A1 13410	RAPAPORT, FELIX T MECHANISMS OF CELL DAMAGE IN SEVERE BURNS	STATE UNIVERSITY NEW YORK STONY BROOK	STONY BROOK NEW YORK	82	04-83	2	SAT 175,424	240,462
5	R01 GM24531-05 13200	TINKER, JOHN H ORGAN PROTECTION: ROLE OF ANESTHETICS	MAYO FOUNDATION	ROCHESTER MINNESOTA	82	12-82	1	SAT 88,360	118,023
2	R01 GM24901-06 13410	PETERS, RICHARD M INTERSTITIAL TISSUE AND ONCOTIC PRESSURE IN TRAUMA	UNIVERSITY OF CALIFORNIA SAN DIEGO	LA JOLLA CALIFORNIA	82	06-83	4	SAT 88,706	117,571
5	R01 GM24936-05 13200	PARMENTIER, JAMES L MODE OF ACTION OF VOLATILE ANESTHETICS	DUKE UNIVERSITY	DURHAM NORTH CAROLINA	82	03-83	1	SAT 73,680	110,520
5	R01 GM25188-05 13420	ROSEN, GERALD M HEPATIC METABOLIC DYSFUNCTION ASSOCIATED WITH TRAUMA	DUKE UNIVERSITY	DURHAM NORTH CAROLINA	82	03-83	1	SAT 69,824	104,736
2	R01 GM25561-04A1 13420	EHRLICH, H PAUL THE CONTROL AND MODIFICATION OF SCAR FORMATION	MASSACHUSETTS GENERAL HOSPITAL	BOSTON MASSACHUSETTS	82	03-83	2	SAT 56,636	69,409
5	R01 GM25759-03 13410	ROBINSON, WILLIAM A RED AND WHITE BLOOD CELL PRODUCTION IN BURNED HUMANS	UNIVERSITY OF COLORADO HLTH SCIENCES CTR	DENVER COLORADO	82	03-83	2	SAT 76,361	95,069
2	R01 GM25896-04 13410	MILLER, CAROL L ANALYSIS OF IMMUNE STATUS OF TRAUMA AND SURGICAL PATIENT	UNIVERSITY OF CALIFORNIA SAN FRANCISCO	SAN FRANCISCO CALIFORNIA	82	12-82	2	SAT 71,179	92,702
5	R01 GM25926-04 13200	MULDOON, SHEILA M GENERAL ANESTHETICS AND VASCULAR NEUROEFFECTOR SYSTEMS	U.S. UNIFORMED SERVICES UNIV OF HLTH SCI	BETHESDA MARYLAND	82	02-83	0	SAT 29,126	29,126
5	R01 GM25998-03 13700	PROUDFIT, HERBERT K CNS SITES OF ACTION OF ANALGESIC DRUGS	UNIVERSITY OF ILLINOIS MEDICAL CENTER	CHICAGO ILLINOIS	82	12-82	0	SAT 26,509	41,619
2	R01 GM26102-04A1 13410	LOEGERING, DANIEL J HEMOLYSIS AND PHAGOCYTIC DYSFUNCTION DURING SHOCK	ALBANY MEDICAL COLLEGE	ALBANY NEW YORK	82	06-83	2	SAT 57,888	89,261
5	R01 GM26136-05 13200	HUANG, JEN-TZAW ULTRALONG NERVE BLOCK AND UNCONVENTIONAL ANESTHETICS	VIRGINIA MASON RESEARCH CENTER	SEATTLE WASHINGTON	82	08-83	0	SAT 36,469	54,941

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2	R01 GM26433-04 13420	GUMP, FRANK E REGIONAL METABOLISM IN SEPSIS	COLUMBIA UNIVERSITY	NEW YORK	82 NEW YORK	03-83	2	94,498	SAT 157,121
2	R01 GM26745-04 NS 13200	MATTEO, RICHARD S PHARMACOKINETICS, MUSCLE RELAXANTS & ANTAGONISTS	COLUMBIA UNIVERSITY	NEW YORK	82 NEW YORK	06-83	2	49,814	SAT 84,534
2	R01 GM26950-04 13200	UEDA, ISSAKU ANESTHETIC INTERACTION WITH MODEL PROTEINS	UNIVERSITY OF UTAH	SALT LAKE CITY	82 UTAH	06-83	2	53,285	SAT 69,053
5	R01 GM26956-03 13410	SANCES, ANTHONY, JR ELECTRICAL BURN INJURY STUDIES	MEDICAL COLLEGE OF WISCONSIN	MILWAUKEE	81 WISCONSIN	12-82	0	66,033	SAT 87,694
5	R01 GM27069-03 13200	HORNBEIN, THOMAS F BRAIN HYPOXIA IN INTRAOPERATIVE HYPOTENSION-HEMODILUTION	UNIVERSITY OF WASHINGTON	SEATTLE	82 WASHINGTON	02-83	0	49,635	SAT 63,500
5	R23 GM27172-03 13250	PRIANO, LAWRENCE L ACTION OF I V ANESTHETICS ON REGIONAL BLOOD FLOWS	UNIVERSITY OF TEXAS MED BR GALVESTON	GALVESTON	82 TEXAS	12-82	0	24,250	SAT 32,738
5	R01 GM27229-03 13410	LEWIS, FRANK R, JR LUNG WATER AND PULMONARY CAPILLARY PERMEABILITY	UNIVERSITY OF CALIFORNIA SAN FRANCISCO	SAN FRANCISCO	82 CALIFORNIA	01-83	2	62,429	SAT 81,782
5	R01 GM27353-03 13200	GRUENER, RAPHAEL P ANESTHETIC ACTION ON NORMAL AND HYPERTHERMIA MUSCLES	UNIVERSITY OF ARIZONA	TUCSON	82 ARIZONA	05-83	0	24,087	SAT 34,444
5	R01 GM27670-03 13200	UEDA, ISSAKU AROMATIC AMINE LOCAL ANESTHETICS AND MEMBRANES	UNIVERSITY OF UTAH	SALT LAKE CITY	82 UTAH	03-83	0	37,725	SAT 54,701
5	R01 GM27673-03 13410	COOK, JAMES A ROLE OF THROMBOXANE AND PROSTAGLANDINS IN SHOCK	MEDICAL UNIVERSITY OF SOUTH CAROLINA	CHARLESTON	82 SOUTH CAROLINA	03-83	0	41,258	SAT 54,048
5	R01 GM27678-03 13200	FINK, B RAYMOND HYPOOSMOTIC LOCAL ANESTHESIA: MECHANISMS AND TOXICITY	UNIVERSITY OF WASHINGTON	SEATTLE	82 WASHINGTON	03-83	0	95,503	SAT 127,370
5	R23 GM27791-03 13250	WASKELL, LUCY A METABOLISM OF INHALATION ANESTHETICS	UNIVERSITY OF CALIFORNIA SAN FRANCISCO	SAN FRANCISCO	82 CALIFORNIA	08-83	0	30,256	SAT 36,417

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2	R01 GM27946-03 13420	GANN, DONALD S HORMONAL AND CARDIOVASCULAR RESPONSE TO TRAUMA	RHODE ISLAND HOSPITAL	PROVIDENCE	RHODE ISLAND	82	06-83	4	SAT 132,243	201,971
5	R01 GM28023-03 13420	FLYNN, JOHN T RELATIONSHIPS BETWEEN PROSTANOIDS AND CELLULAR INJURY	THOMAS JEFFERSON UNIVERSITY	PHILADELPHIA	PENNSYLVANIA	82	08-83	0	SAT 28,474	49,545
5	R23 GM28032-03 13250	STANSKI, DONALD R INTRAVENOUS ANESTHETICS IN SURGICAL PATIENTS	STANFORD UNIVERSITY	STANFORD	CALIFORNIA	82	06-83	0	SAT 26,601	38,571
5	R01 GM28267-03 13200	BRIDENBAUGH, PHILLIP O EFFECT OF TONICITY ON SPINAL ANESTHESIA IN THE MONKEY	UNIVERSITY OF CINCINNATI	CINCINNATI	OHIO	82	06-83	0	SAT 36,169	50,637
5	R01 GM28485-02 13420	ULEVITCH, RICHARD J MOLECULAR PATHOLOGY OF LPS-INDUCED SHOCK AND DIC	SCRIPPS CLINIC AND RESEARCH FOUNDATION	LA JOLLA	CALIFORNIA	82	02-83	0	SAT 49,844	82,193
5	R01 GM28499-02 13410	WARD, PETER A THERMAL INJURY, COMPLEMENT, AND LEUKOCYTE DYSFUNCTION	UNIVERSITY OF MICHIGAN AT ANN ARBOR	ANN ARBOR	MICHIGAN	82	12-82	3	SAT 64,787	102,363
5	R23 GM28502-02 13250	CAHALAN, MICHAEL K THE RATE OF METABOLISM OF VOLATILE ANESTHETICS IN MAN	UNIVERSITY OF CALIFORNIA SAN FRANCISCO	SAN FRANCISCO	CALIFORNIA	82	11-82	1	SAT 33,950	44,475
5	R23 GM28591-02 13450	GELFAND, JEFFREY A BURN INJURY AND SHOCK: THE ROLE OF COMPLEMENT	TUFTS UNIVERSITY	BOSTON	MASSACHUSETTS	82	11-82	1	SAT 33,950	53,811
5	R01 GM28689-02 13420	EHRLICH, H PAUL ABNORMAL HEALING IN A MUTANT MOUSE MODEL	MASSACHUSETTS GENERAL HOSPITAL	BOSTON	MASSACHUSETTS	82	12-82	1	SAT 58,901	63,363
5	R01 GM28889-03 13420	MELA, LEENA M INTRACELLULAR CHANGES INDUCED BY SHOCK AND TRAUMA	MICHIGAN STATE UNIVERSITY	EAST LANSING	MICHIGAN	82	08-83	2	SAT 103,952	146,572
5	R01 GM28911-02 13200	KNIGHT, PAUL R, III ANESTHETIC ACTION AND VIRUS REPLICATION	UNIVERSITY OF MICHIGAN AT ANN ARBOR	ANN ARBOR	MICHIGAN	82	03-83	1	SAT 50,831	80,313
1	R01 GM28964-01A1 13420	RUSH, BENJAMIN F, JR CELL BIOLOGY OF HEPATOCYTES INJURED BY HEMORRHAGIC SHOCK	UNIVERSITY OF MEDICINE & DENTISTRY OF NJ	NEWARK	NEW JERSEY	82	01-83	2	SAT 70,325	111,755

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5	R01 GM29065-02 13200	COLLINS, J ANESTHESIA-ANALGESIA OF AWAKE SPINAL NEURONS	YALE UNIVERSITY	NEW HAVEN CONNECTICUT	82	03-83	1	SAT 42,844	67,114
5	R01 GM29135-02 13420	LEIBOVICH, S JOSEPH MACROPHAGES, FIBROBLAST STIMULATION, AND WOUND REPAIR	NORTHWESTERN UNIVERSITY	CHICAGO ILLINOIS	82	12-82	1	SAT 40,008	55,211
5	R01 GM29223-03 13410	NINNEMANN, JOHN L LPS ACTIVATION OF SUPPRESSOR CELLS AFTER BURN INJURY	UNIVERSITY OF UTAH	SALT LAKE CITY UTAH	82	08-83	0	SAT 91,074	123,640
5	R01 GM29226-02 13410	NINNEMANN, JOHN L IMMUNE CONSEQUENCES OF THERMAL INJURY	UNIVERSITY OF UTAH	SALT LAKE CITY UTAH	82	03-83	1	SAT 56,628	82,111
5	R01 GM29250-02 13200	HOLADAY, DUNCAN A METABOLISM OF VOLATILE FLUORINATED ANESTHETICS	VANDERBILT UNIVERSITY	NASHVILLE TENNESSEE	81	02-83	0	SAT 68,451	97,599
5	R23 GM29371-02 13450	GAMELLI, RICHARD L LYMPHOMYELOPOIETIC RESPONSE TO BURN INJURY	UNIVERSITY OF VERMONT & ST AGRIC COLLEGE	BURLINGTON VERMONT	82	07-83	1	SAT 34,920	52,031
1	R01 GM29507-01A1 HL 13410	WARD, PETER A LUNG INJURY PRODUCED BY OXYGEN METABOLITES	UNIVERSITY OF MICHIGAN AT ANN ARBOR	ANN ARBOR MICHIGAN	82	06-83	4	SAT 89,136	137,819
1	R01 GM29527-01A1 13200	RUSY, BEN F ANESTHETIC INDUCED CARDIAC DEPRESSION	UNIVERSITY OF WISCONSIN MADISON	MADISON WISCONSIN	82	04-83	2	SAT 26,898	38,064
1	R01 GM29531-01A1 HL 13420	KARIMAN, KHALIL MONITORING OF CYTOCHROME REDOX STATE IN SHOCK	DUKE UNIVERSITY	DURHAM NORTH CAROLINA	82	04-83	2	SAT 87,057	119,618
5	R23 GM29617-02 13450	ALLMAN, FRANK D HYPERMETABOLISM AFTER SEVERE HEAD TRAUMA IN CHILDREN	CHILDREN'S HOSPITAL OF LOS ANGELES	LOS ANGELES CALIFORNIA	82	06-83	1	SAT 29,100	42,734
5	R01 GM29628-02 13200	MARSHALL, BRYAN E ANESTHESIA & HYPOXIC PULMONARY VASOCONSTRICTION	UNIVERSITY OF PENNSYLVANIA	PHILADELPHIA PENNSYLVANIA	82	06-83	1	SAT 93,558	148,553
5	R01 GM29641-02 13200	KAMPINE, JOHN P THE EFFECTS OF ANESTHETICS ON CARDIOVASCULAR REFLEXES	MEDICAL COLLEGE OF WISCONSIN	MILWAUKEE WISCONSIN	82	06-83	1	SAT 45,976	54,619

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5	R23 GM29664-02 13250	SMITH, DAVID S THE ROLE OF HYPOXIA IN THE PRODUCTION OF CEREBRAL EDEMA	UNIVERSITY OF PENNSYLVANIA	PHILADELPHIA	PENNSYLVANIA	82	06-83	1	SAT 36,375	55,729
5	R01 GM29796-02 13420	CURRERI, P WILLIAM METABOLISM AND NUTRITION IN BURNS AND TRAUMA	UNIVERSITY OF SOUTH ALABAMA	MOBILE	ALABAMA	82	01-83	2	SAT 69,792	88,307
1	R23 GM30086-01 13450	DAVIS, JOHN M IMPAIRED HOST DEFENSE MECHANISMS IN SHOCK	CORNELL UNIVERSITY MEDICAL CENTER	NEW YORK	NEW YORK	82	01-83	2	SAT 35,000	50,840
1	R01 GM30160-01 NS 13200	STRICHARTZ, GARY R DIFFERENTIAL ANESTHESIA OF NERVE FIBERS	PETER BENT BRIGHAM HOSPITAL	BOSTON	MASSACHUSETTS	82	01-83	2	SAT 133,395	159,803
1	R23 GM30272-01 13450	MAIER, RONALD V CELLULAR MECHANISMS LPS-INDUCED INJURY	UNIVERSITY OF WASHINGTON	SEATTLE	WASHINGTON	82	12-82	2	SAT 36,900	43,222
1	R01 GM30312-01 13420	SPITZER, JUDY A ALTERED CA2+ HOMEOSTASIS & METABOLIC FUNCTIONS IN SEPSIS	LOUISIANA STATE UNIV MED CTR NEW ORLEANS	NEW ORLEANS	LOUISIANA	82	12-82	4	SAT 57,756	76,263
1	R01 GM30407-01 13420	BAXTER, CHARLES R COMPOSITE GRAFTS IN THE TREATMENT OF THERMAL INJURY	UNIVERSITY OF TEXAS HLTH SCI CTR DALLAS	DALLAS	TEXAS	82	04-83	2	SAT 106,262	132,793
1	R01 GM30473-01 13410	SPATH, JAMES A, JR SEROTONIN AND OPIATE INTERACTIONS IN HEMORRHAGIC SHOCK	THOMAS JEFFERSON UNIVERSITY	PHILADELPHIA	PENNSYLVANIA	82	04-83	2	SAT 62,604	97,289
1	R23 GM30502-01 13250	CROSBY, GREGORY J SPINAL CORD AND BRAIN LOCAL METABOLISM DURING ANESTHESIA	MASSACHUSETTS GENERAL HOSPITAL	BOSTON	MASSACHUSETTS	82	04-83	2	SAT 32,933	46,209
1	R01 GM30703-01 13200	OHNISHI, S TSUYOSHI EFFECT OF ANESTHETICS ON CARDIAC SARCOPLASMIC RETICULUM	HAHNEMANN MED COL & HOSP OF PHILADELPHIA	PHILADELPHIA	PENNSYLVANIA	82	04-83	2	SAT 48,804	72,079
5	R01 GM30799-02 13200	BLANCK, THOMAS J J ANESTHETIC DEPRESSION OF THE MYOCARDIUM	JOHNS HOPKINS UNIVERSITY	BALTIMORE	MARYLAND	82	04-83	3	SAT 41,621	58,632
1	R01 GM30820-01 HL 13200	CHRISTIAN, CHARLES, II ANESTHESIA AND THE CARDIOVASCULAR SYSTEM	DUKE UNIVERSITY	DURHAM	NORTH CAROLINA	82	07-83	2	SAT 92,058	127,155

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1	R01 GM31066-01 13410	GROSSMAN, JEFFREY E CRYOPRECIPITATE THERAPY OF CRITICALLY ILL PATIENTS	UNIVERSITY OF WISCONSIN	MADISON MADISON WISCONSIN	82	07-83	1	SAT 42,934	61,396
1	R01 GM31078-01 13410	MC INTOSH, TRACY K ENDORPHIN AND CATECHOLAMINE RESPONSE TO SHOCK AND TRAUMA	BOSTON UNIVERSITY	BOSTON MASSACHUSETTS	82	06-83	2	SAT 45,533	81,777
1	R23 GM31144-01 13250	LYNCH, CARL, III CALCIUM CURRENT DEPRESSION BY VOLATILE ANESTHETICS	UNIVERSITY OF VIRGINIA	CHARLOTTESVILLE CHARLOTTESVILLE VIRGINIA	82	07-83	2	SAT 28,126	40,783
1	R01 GM31150-01 13410	HEIMBACH, DAVID M EFFECTS OF MULTIPLE TRANSFUSIONS IN TRAUMA AND BURNS	UNIVERSITY OF WASHINGTON	SEATTLE WASHINGTON	82	07-83	2	SAT 51,595	68,933
7	R01 GM31662-01 13410	DEMLING, ROBERT H PATHOPHYSIOLOGY OF LUNGS AFTER THERMAL INJURY	BETH ISRAEL HOSPITAL	BOSTON MASSACHUSETTS	82	06-83	1	SAT 105,065	152,350
7	R01 GM31664-01 13420	LIU, MAW-SHUNG HEPATIC GLUCOSE METABOLISM IN SHOCK	ST. LOUIS UNIVERSITY	SAINT LOUIS MISSOURI	82	03-83	0	SAT 53,183	79,775
5	R01 GM32104-02 13700	MC CREERY, DOUGLAS B SPINAL AND SUPRASPINAL MECHANISMS OF ELECTROANALGESIA	HUNTINGTON MEDICAL RESEARCH INSTITUTES	PASADENA CALIFORNIA	82	06-83	0	SAT 36,820	59,427
***	0	* CENTERS						0	0
***	80	NONCENTERS						4,982,700	7,159,993
***	80	TOTAL						4,982,700	7,159,993
5	R01 GM22952-06 12400	JANATA, JIRI CHEMICALLY SENSITIVE FIELD EFFECT TRANSISTORS	UNIVERSITY OF UTAH	SALT LAKE CITY UTAH	82	03-83	1	SB 67,900	98,455

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5	R01 GM24300-05 / 12350	NELSON, RONALD J / DEVELOPMENT OF A MICROPOROUS TRACHEAL PROSTHESIS	LOS ANGELES COUNTY HARBOR-UCLA MED CTR	TORRANCE / CALIFORNIA	82	02-83	1	SB		70,318	89,665
2	R01 GM25810-04 / 12400	LANGER, ROBERT S / A SYSTEM FOR HEPARIN REMOVAL	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	CAMBRIDGE / MASSACHUSETTS	82	12-82	2	SB		89,849	132,289
5	R01 GM27165-02 / 12990	GLASER, EDMUND M / INTERACTIVE CAMERA LUCIDA COMPUTER-MICROSCOPE	UNIVERSITY OF MARYLAND AT BALTIMORE	BALTIMORE / MARYLAND	81	12-82	0	SB		46,901	78,325
5	R23 GM27245-03 / 13450	SUGERMAN, HARVEY J / PATHOPHYSIOLOGIC EFFECTS OF PERITONITIS	VIRGINIA COMMONWEALTH UNIVERSITY	RICHMOND / VIRGINIA	82	12-82	0	SB		29,617	45,373
5	R01 GM28947-02 / 12400	LIU, CHUNG-CHIUN / PALLADIUM-PALLADIUM OXIDE MINIATURE PH ELECTRODE	CASE WESTERN RESERVE UNIVERSITY	CLEVELAND / OHIO	82	03-83	0	SB		41,166	62,161
1	R01 GM30205-01 / 12820	LEONARD, EDWARD F / TECHNOLOGY OF THERAPEUTIC MEMBRANE PLASMAPHERESIS	COLUMBIA UNIVERSITY	NEW YORK / NEW YORK	82	01-83	2	SB		79,639	124,256
***	0	* CENTERS								0	0
***	7	NONCENTERS								425,390	630,524
***	7	TOTAL								425,390	630,524
5	R01 GM22023-06 / 12500	COOPER, JEFFREY B / NEW APPROACHES TO ANESTHESIA MANAGEMENT	MASSACHUSETTS GENERAL HOSPITAL	BOSTON / MASSACHUSETTS	81	09-82	0	SGYA		86,757	119,495
5	R01 GM24524-03 / 13200	DOWNES, HALL / FATE AND EFFECTS OF LOCAL ANESTHETIC AEROSOLS	OREGON HEALTH SCIENCES UNIVERSITY	PORTLAND / OREGON	81	12-82	0	SGYA		41,356	54,590

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5	R01 GM25078-05 / 13420	TRUNKEY, DONALD D / INTRACELLULAR MEDIATORS DURING SEPTIC AND BURN SHOCK	UNIVERSITY OF CALIFORNIA	SAN FRANCISCO / SAN FRANCISCO CALIFORNIA	82	03-83	0	SGYA	70,254	92,033
5	R01 GM25753-04 / 13420	ROSEN, GERALD M / POST TRAUMATIC FATTY ACID METABOLISM AND CELLULAR INJURY	DUKE UNIVERSITY	DURHAM / NORTH CAROLINA	82	11-82	1	SGYA	83,617	125,426
5	R01 GM26297-06 / 13410	LOEGERING, DANIEL J / MECHANISM OF RETICULOENDOTHELIAL FAILURE IN SHOCK	ALBANY MEDICAL COLLEGE	ALBANY / NEW YORK	81	09-82	0	SGYA	30,354	44,924
5	R01 GM27340-03 / 13200	STILLER, RICHARD L / CARDIOVASCULAR DYNAMICS AND ANESTHETIC DISPOSITION	UNIVERSITY OF PITTSBURGH	PITTSBURGH / PENNSYLVANIA	81	11-82	0	SGYA	76,227	104,428
5	R23 GM27942-03 / 13250	GRUNDY, BETTY L / EFFECTS OF ANESTHETICS ON CORTICAL EVOKED POTENTIALS	UNIVERSITY OF PITTSBURGH	PITTSBURGH / PENNSYLVANIA	81	10-82	0	SGYA	29,894	45,338
***	0	* CENTERS							0	0
***	7	NONCENTERS							418,459	586,234
***	7	TOTAL							418,459	586,234
5	P50 GM21681-18 / 13300	BAXTER, CHARLES R / CIRUCLATORY AND FLUID VOLUME CHANGES IN BURNS	UNIVERSITY OF TEXAS HLTH SCI CTR DALLAS	DALLAS / TEXAS	82	11-82	1	SGYB	182,781	245,538
5	R01 GM24104-03 / 12400	JARZEMBSKI, WILLIAM B / CURRENT PATHWAYS IN TISSUE DUE TO ELECTRICAL STIMULUS	TEXAS TECH UNIVERSITY	LUBBOCK / TEXAS	81	12-82	0	SGYB	27,798	35,114
5	R01 GM25538-03 / 12200	KATONA, PETER G / OPTIMAL AUTOMATED CONTROL OF PHYSIOLOGICAL SYSTEMS	CASE WESTERN RESERVE UNIVERSITY	CLEVELAND / OHIO	81	07-83	0	SGYB	42,532	64,223

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5	R01 GM26187-03 12400	MARTIN, ROY W AIR EMBOLI DETECTION BY ULTRASONIC CATHETER METHODS	UNIVERSITY OF WASHINGTON	SEATTLE WASHINGTON	81	09-82	0	SGYB 51,810	69,085
5	R01 GM26508-03 12400	JANATA, JIRI IMMUNOCHEMICALLY SENSITIVE FIELD EFFECT TRANSISTOR	UNIVERSITY OF UTAH	SALT LAKE CITY UTAH	81	03-83	0	SGYB 39,653	58,290
***	1	* CENTERS						182,781	245,538
***	4	NONCENTERS						161,793	226,712
***	5	TOTAL						344,574	472,250
1	R13 GM01611-01 JF 22500	JARDETZKY, OLEG CONFERENCE ON MAGNETIC RESONANCE	STANFORD UNIVERSITY	STANFORD CALIFORNIA	82	07-83	0	SRC 3,000	3,000
1	R13 GM01628-01 JF 21600	GOAD, WALTER B WORKSHOP ON COMPUTATIONAL ANALYSIS OF DNA SEQUENCES	ASPEN CENTER FOR PHYSICS	ASPEN COLORADO	82	07-83	0	SRC 3,000	3,000
2	P50 GM15253-16 * 21915	MOTULSKY, ARNO G CENTER FOR INHERITED DISEASES	UNIVERSITY OF WASHINGTON	SEATTLE WASHINGTON	82	05-83	4	SRC 502,970	673,477
2	P50 GM15426-16 * 13300	BOURKE, ROBERT S ON-LINE COMPUTER STUDY OF THERAPY FOR HUMAN SHOCK	ALBANY MEDICAL COLLEGE	ALBANY NEW YORK	82	06-83	2	SRC 378,704	549,555
5	P01 GM15768-13 13300	BORDER, JOHN R SEQUENCE OF ORGAN FAILURES FOLLOWING TRAUMA	STATE UNIVERSITY OF NEW YORK AT BUFFALO	BUFFALO NEW YORK	81	06-83	0	SRC 247,487	316,346
5	P50 GM17702-12 * 21916	SEEGMILLER, JARVIS E HUMAN BIOCHEMICAL GENETICS PROGRAM	UNIVERSITY OF CALIFORNIA SAN DIEGO	LA JOLLA CALIFORNIA	82	11-82	3	SRC 428,982	561,966

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5	P50 GM18470-11	TRUNKEY, DONALD D	UNIVERSITY OF CALIFORNIA	SAN FRANCISCO	82	06-83	0	SRC		
*	13300	TRAUMA CENTER RESEARCH PROGRAM		SAN FRANCISCO CALIFORNIA					336,241	410,214
5	P50 GM21700-08	BURKE, JOHN F	MASSACHUSETTS GENERAL HOSPITAL		82	11-82	3	SRC		
*	13300	BURN TRAUMA CENTER		BOSTON MASSACHUSETTS					426,381	576,746
2	P01 GM23065-07A1	LONG, CALVIN L	MEDICAL COLLEGE OF OHIO AT TOLEDO		82	06-83	2	SRC		
	13300	METABOLIC RESPONSE TO TRAUMA		TOLEDO OHIO					238,566	376,955
5	P50 GM23095-07	MOODY, FRANK G	UNIVERSITY OF UTAH		82	06-83	2	SRC		
*	13300	TRAUMA AND BURN RESEARCH CENTER		SALT LAKE CITY UTAH					319,687	436,445
5	P01 GM23732-06	YATES, FRANCIS E	UNIVERSITY OF SOUTHERN CALIFORNIA		82	04-83	1	SRC		
	12200	CENTER FOR SYSTEMS ANALYSIS IN PATHOPHYSIOLOGY		LOS ANGELES CALIFORNIA					472,701	582,118
5	P01 GM24487-05	LYMAN, DONALD J	UNIVERSITY OF UTAH		82	01-83	1	SRC		
	12300	BIOMEDICAL ENGINEERING CENTER FOR POLYMERIC IMPLANTS		SALT LAKE CITY UTAH					329,831	477,537
5	P50 GM24990-05	CARRICO, C JAMES	UNIVERSITY OF WASHINGTON		82	07-83	3	SRC		
*	13300	ORGAN AND CELLULAR RESPONSE TO TRAUMA AND BURNS		SEATTLE WASHINGTON					371,676	435,746
5	P50 GM26145-04	SHIRES, G THOMAS	CORNELL UNIVERSITY MEDICAL CENTER		82	03-83	1	SRC		
*	13300	BURN AND TRAUMA RESEARCH CENTER		NEW YORK NEW YORK					249,070	363,807
5	P01 GM27028-03	WEBER, WENDELL W	UNIVERSITY OF MICHIGAN AT ANN ARBOR		82	12-82	2	SRC		
	11700	EXPERIMENTAL AND CLINICAL PHARMACOGENETICS		ANN ARBOR MICHIGAN					188,808	298,317
3	P01 GM27028-03S1	WEBER, WENDELL W	UNIVERSITY OF MICHIGAN AT ANN ARBOR		82	12-82	2	SRC		
	11700	EXPERIMENTAL AND CLINICAL PHARMACOGENETICS		ANN ARBOR MICHIGAN					6,227	9,839
5	P50 GM27345-03	HUNT, THOMAS K	UNIVERSITY OF CALIFORNIA	SAN FRANCISCO	82	12-82	0	SRC		
*	13300	A STUDY OF WOUND HEALING AND WOUND INFECTION		SAN FRANCISCO CALIFORNIA					295,406	386,125
5	P50 GM29327-02	WILMORE, DOUGLAS W	PETER BENT BRIGHAM HOSPITAL		82	08-83	3	SRC		
*	13300	TRAUMA--REGULATORS & MODULATORS OF THE CATABOLIC STATE		BOSTON MASSACHUSETTS					320,263	401,799

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1	P01 GM29853-01 13300	STRIKER, GARY E CELL & MOLECULAR RESPONSE TO MECHANICAL & THERMAL INJURY	UNIVERSITY OF WASHINGTON	SEATTLE WASHINGTON	82	01-83	4	SRC	360,372	450,570
***	10	* CENTERS							3,629,380	4,795,880
***	8	NONCENTERS							1,849,992	2,517,682
***	18	TOTAL							5,479,372	7,313,562
5	R01 GM05472-24 12840	BIEMANN, KLAUS MASS SPECTROMETRIC SEQUENCING OF PROTEINS	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	CAMBRIDGE MASSACHUSETTS	82	12-82	3	SSS	144,724	199,276
5	P01 GM06965-23 22300	REVEL, JEAN-PAUL MOLECULAR BASIS OF SPECIFICITY IN CELLULAR MEMBRANES	CALIFORNIA INSTITUTE OF TECHNOLOGY	PASADENA CALIFORNIA	82	02-83	1	SSS	385,588	563,336
3	P01 GM06965-23S1 22300	REVEL, JEAN P MOLECULAR BASIS OF SPECIFICITY IN CELLULAR MEMBRANES	CALIFORNIA INSTITUTE OF TECHNOLOGY	PASADENA CALIFORNIA	82	02-83	1	SSS	97,190	142,305
2	R01 GM08710-22 22500	DAYHOFF, MARGARET O COMPUTER STUDY OF SEQUENCES OF AMINO ACIDS IN PROTEINS	NATIONAL BIOMEDICAL RESEARCH FOUNDATION	WASHINGTON DIST OF COL	82	07-83	1	SSS	260,346	364,472
3	R01 GM10265-20S1 11930	LETSINGER, ROBERT L NIGMS SHARED INSTRUMENTATION GRANT	NORTHWESTERN UNIVERSITY	EVANSTON ILLINOIS	82	06-83	2	SSS	65,485	65,937
5	R01 GM10452-19 21400	KARLIN, SAMUEL STOCHASTIC MODELS IN MEDICINE AND BIOLOGY	STANFORD UNIVERSITY	STANFORD CALIFORNIA	82	12-82	1	SSS	109,461	172,948
5	R01 GM11024-19 22300	OXENDER, DALE L MEMBRANE TRANSPORT COMPONENTS IN BACTERIA	UNIVERSITY OF MICHIGAN AT ANN ARBOR	ANN ARBOR MICHIGAN	82	07-83	2	SSS	73,547	115,624

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5	P01 GM11301-20 21700	SHAPIRO, LUCILLE GENETIC CONTROL OF CELL GROWTH AND DEVELOPMENT	YESHIVA UNIVERSITY	NEW YORK	82 NEW YORK	05-83	2	SSS 468,023	867,943
5	R01 GM11373-20 12840	WINEFORDNER, JAMES D MOLECULAR SPECTROMETRIC METHODS FOR DRUGS	UNIVERSITY OF FLORIDA	GAINESVILLE	82 FLORIDA	08-83	3	SSS 119,908	169,215
5	P01 GM11546-19 21800	COCKERHAM, C CLARK QUANTITATIVE GENETICS RESEARCH PROGRAM	NORTH CAROLINA STATE UNIVERSITY RALEIGH	RALEIGH	82 NORTH CAROLINA	11-82	3	SSS 296,199	413,879
3 3	R01 GM12010-19S1 21310	CHAMBERLIN, MICHAEL J NIGMS SHARED INSTRUMENTATION GRANT	UNIVERSITY OF CALIFORNIA BERKELEY	BERKELEY	82 CALIFORNIA	03-83	2	SSS 175,090	179,768
5	P01 GM12202-19 22450	WILSON, DAVID F OXIDATIVE PHOSPHORYLATION IN BIOLOGICAL MEMBRANES	UNIVERSITY OF PENNSYLVANIA	PHILADELPHIA	82 PENNSYLVANIA	04-83	0	SSS 308,547	500,653
3	R01 GM13344-17S1 21200	HURWITZ, JERARD STUDIES ON PROCARYOTIC AND EUCARYOTIC DNA REPLICATION	YESHIVA UNIVERSITY	NEW YORK	82 NEW YORK	11-82	1	SSS 21,710	40,381
2	P01 GM13901-17 12840	HORNING, EVAN C ANALYTICAL BIOCHEMISTRY FOR HUMAN STUDIES	BAYLOR COLLEGE OF MEDICINE	HOUSTON	82 TEXAS	07-83	2	SSS 276,601	356,557
5 *	P50 GM15431-15 11300	OATES, JOHN A RESEARCH CENTER FOR PHARMACOLOGY AND DRUG TOXICOLOGY	VANDERBILT UNIVERSITY	NASHVILLE	82 TENNESSEE	11-82	0	SSS 991,453	1,517,625
5	P01 GM15731-14 22500	WALSH, KENNETH A BIOLOGICAL CONTROL BY LIMITED PROTEOLYSIS	UNIVERSITY OF WASHINGTON	SEATTLE	81 WASHINGTON	11-82	0	SSS 282,001	374,481
2	R01 GM15847-13 12820	KARGER, BARRY L STUDIES IN HIGH PERFORMANCE LIQUID CHROMATOGRAPHY	NORTHEASTERN UNIVERSITY	BOSTON	82 MASSACHUSETTS	11-82	2	SSS 92,045	123,919
5	R01 GM16066-15 21100	TS'O, PAUL O NUCLEIC ACID CHEMISTRY AND ITS BIOMEDICAL APPLICATION	JOHNS HOPKINS UNIVERSITY	BALTIMORE	82 MARYLAND	06-83	0	SSS 129,257	191,386
5	R01 GM16449-15 22500	LIPPARD, STEPHEN J LIGAND-BRIDGED BINUCLEAR METAL COMPLEXES AND PROTEINS	COLUMBIA UNIVERSITY	NEW YORK	82 NEW YORK	08-83	0	SSS 71,143	120,033

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5	R01 GM16501-12 12100	GARFINKEL, DAVID COMPUTER MODELING METHODS FOR METABOLIC SYSTEMS	UNIVERSITY OF PENNSYLVANIA	PHILADELPHIA	PENNSYLVANIA	81	03-83	0	SSS		63,618	104,970
5	R01 GM17173-13 21400	MORTON, NEWTON E A RESEARCH PROGRAM IN GENETIC EPIDEMIOLOGY	UNIVERSITY OF HAWAII AT MANOA	HONOLULU	HAWAII	82	02-83	2	SSS		170,717	239,004
5	R01 GM17367-13 12990	HERZENBERG, LEONARD A CLINICAL AND BIOLOGICAL USES OF AUTOMATED CELL SORTING	STANFORD UNIVERSITY	STANFORD	CALIFORNIA	82	12-82	1	SSS		326,059	515,173
5	R01 GM17383-12 21600	ALLFREY, VINCENT G CHEMISTRY AND METABOLISM OF DNA-ASSOCIATED PROTEINS	ROCKEFELLER UNIVERSITY	NEW YORK	NEW YORK	82	01-83	3	SSS		78,125	118,112
5	P01 GM17940-13 12400	MEINDL, JAMES D BME CENTER FOR INTEGRATED ELECTRONICS IN MEDICINE	STANFORD UNIVERSITY	STANFORD	CALIFORNIA	82	08-83	0	SSS		582,000	983,580
5	R01 GM18770-10 12100	GOOD, IRVING J PROBABILITY ESTIMATION	VIRGINIA POLYTECHNIC INST AND ST UNIV	BLACKSBURG	VIRGINIA	82	11-82	2	SSS		77,573	110,929
5	R01 GM19035-11 22300	PRESTEGARD, JAMES H NMR INVESTIGATIONS OF VESICULAR MEMBRANES	YALE UNIVERSITY	NEW HAVEN	CONNECTICUT	82	12-82	3	SSS		63,686	98,864
2	R01 GM19078-10A1 22300	KADNER, ROBERT J GENE AMPLIFICATION AND MEMBRANE PROTEINS	UNIVERSITY OF VIRGINIA CHARLOTTESVILLE	CHARLOTTESVILLE	VIRGINIA	82	08-83	2	SSS		57,513	81,639
5	P50 GM19100-10 * 21917	NITOWSKY, HAROLD M SUPPORT FOR GENETICS RESEARCH CENTER	YESHIVA UNIVERSITY	NEW YORK	NEW YORK	82	11-82	0	SSS		367,200	682,992
5	P01 GM19521-10 21700	CHAPMAN, VERNE M GENETIC STUDY OF MAMMALIAN CONTROL SYSTEMS	ROSWELL PARK MEMORIAL INSTITUTE	BUFFALO	NEW YORK	81	04-83	0	SSS		567,502	781,841
3	P01 GM19521-10S1 21700	CHAPMAN, VERNE M GENETIC STUDY OF MAMMALIAN CONTROL SYSTEMS	ROSWELL PARK MEMORIAL INSTITUTE	BUFFALO	NEW YORK	82	04-83	0	SSS		186,326	269,856
2	R01 GM19821-07 21320	APIRION, DAVID GENETICS AND BIOCHMEISTRY OF RNA PROCESSING IN E COLI	WASHINGTON UNIVERSITY	SAINT LOUIS	MISSOURI	82	11-82	2	SSS		148,652	228,774

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5	P50 GM20124-10	ROSENBERG, LEON E	YALE UNIVERSITY	NEW HAVEN	82	03-83	0	SSS		524,110	807,840
*	21912	STUDY OF HUMAN GENETICS AND INHERITED DISEASE		CONNECTICUT							
5	P50 GM20138-09	SCHMICKEL, ROY	UNIVERSITY OF PENNSYLVANIA	PHILADELPHIA	82	04-83	1	SSS		611,180	855,548
*	21911	HUMAN GENETICS CENTER SUPPORT		PENNSYLVANIA							
5	R01 GM20467-10	CAVALLI-SFORZA, LUIGI L	STANFORD UNIVERSITY	STANFORD	82	07-83	3	SSS		167,577	264,772
	21400	HUMAN POPULATION GENETICS		CALIFORNIA							
5	P01 GM20927-08	DAVIDSON, ERIC H	CALIFORNIA INSTITUTE OF TECHNOLOGY	PASADENA	82	05-83	1	SSS		241,132	352,075
	21600	SEQUENCE STRUCTURE OF EUKARYOTIC GENOME		CALIFORNIA							
5	R01 GM21034-09	DRYHURST, GLENN	UNIVERSITY OF OKLAHOMA NORMAN	NORMAN	82	06-83	0	SSS		55,097	74,381
	11920	ELECTROCHEMISTRY OF PURINES		OKLAHOMA							
5	P01 GM21096-08	SLY, WILLIAM S	WASHINGTON UNIVERSITY	SAINT LOUIS	82	05-83	0	SSS		310,953	478,952
	21400	ENZYME THERAPY IN LYSOSOMAL STORAGE DISEASES		MISSOURI							
5	R01 GM21215-08	MILLER, RUPERT G, JR	STANFORD UNIVERSITY	STANFORD	82	06-83	0	SSS		76,898	121,499
	12100	ADAPTATION OF NEW STATISTICAL IDEAS FOR MEDICINE		CALIFORNIA							
5	R01 GM21248-08	FENSELAU, CATHERINE C	JOHNS HOPKINS UNIVERSITY	BALTIMORE	82	06-83	0	SSS		76,933	115,400
	11940	APPLICATIONS OF MASS SPECTROMETRY IN PHARMACOLOGY		MARYLAND							
2	R01 GM21277-07A1	CUSANOVICH, MICHAEL A	UNIVERSITY OF ARIZONA	TUCSON	82	03-83	4	SSS		81,155	107,056
	22450	BIOLOGICAL ELECTRON TRANSFER		ARIZONA							
5	R01 GM21584-08	MC CLOSKEY, JAMES A	UNIVERSITY OF UTAH	SALT LAKE CITY	82	12-82	1	SSS		137,088	198,778
	12840	MASS SPECTROMETRY OF NUCLEIC ACIDS AND THEIR ANALOGS		UTAH							
5	R01 GM21703-06	MUNK, MORTON E	ARIZONA STATE UNIVERSITY	TEMPE	82	12-82	0	SSS		70,652	106,685
	11940	COMPUTER-ASSISTED STRUCTURE ELUCIDATION		ARIZONA							
5	P50 GM21714-08	PALADE, GEORGE E	YALE UNIVERSITY	NEW HAVEN	82	11-82	2	SSS		380,000	597,050
*	22300	RESEARCH CENTER ON CELLULAR MEMBRANES		CONNECTICUT							

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5	P01 GM22167-08 21400	WITKOP, CARL J, JR ALBINISM	UNIVERSITY OF MINNESOTA OF MNPLS-ST PAUL	MINNEAPOLIS MINNESOTA	82	08-83	0	SSS		160,290	222,803
5	P01 GM22221-08 21700	GREEN, MELVIN M GENETIC AND EVOLUTIONARY STUDIES WITH DROSOPHILA	UNIVERSITY OF CALIFORNIA DAVIS	DAVIS CALIFORNIA	82	07-83	2	SSS		340,545	460,217
2	R01 GM22387-07 21700	HERMAN, ROBERT K DEVELOPMENTAL GENETICS OF CAENORHABDITIS ELEGANS	UNIVERSITY OF MINNESOTA OF MNPLS-ST PAUL	MINNEAPOLIS MINNESOTA	82	02-83	4	SSS		55,902	75,127
5	P01 GM22778-07 22550	RICHARDS, FREDERIC M PROGRAM IN MACROMOLECULAR STRUCTURE, MOTION, CONTROL	YALE UNIVERSITY	NEW HAVEN CONNECTICUT	82	03-83	3	SSS		438,140	687,621
3	P01 GM22778-07S1 22550	RICHARDS, FREDERIC M NIGMS SHARED INSTRUMENTATION GRANT	YALE UNIVERSITY	NEW HAVEN CONNECTICUT	82	03-83	0	SSS		183,400	183,400
2	R01 GM22940-07 12820	NGUYEN-HUU, X AUTOMATIC ANALYSIS OF 2-DIMENSIONAL ELECTROPHEROGRAMS	UNIVERSITY OF CALIFORNIA SAN DIEGO	LA JOLLA CALIFORNIA	82	07-83	2	SSS	1	97,250	120,337
5	P01 GM23088-05 12990	WHEELESS, LEON L, JR PROGRAM FOR CELL ANALYSIS AND SORTING IN BIOMEDICINE	UNIVERSITY OF ROCHESTER	ROCHESTER NEW YORK	82	12-82	3	SSS		222,980	362,392
2	R01 GM23325-07 12930	GLAESER, ROBERT M BIOLOGICAL STRUCTURE ANALYSIS BY ELECTRON MICROSCOPY	UNIVERSITY OF CALIFORNIA BERKELEY	BERKELEY CALIFORNIA	82	06-83	3	SSS	3	264,558	371,438
5	R01 GM23534-06 11920	GUTSCHE, C DAVID CALIXARENES AS ENZYME MODELS	WASHINGTON UNIVERSITY	SAINT LOUIS MISSOURI	82	12-82	0	SSS		49,306	75,874
5	R01 GM23573-05 22300	THOMPSON, THOMAS E THE PROPERTIES OF BILAYERS CONTAINING GLYCOSPHINGOLIPIDS	UNIVERSITY OF VIRGINIA CHARLOTTESVILLE	CHARLOTTESVILLE VIRGINIA	82	12-82	1	SSS		39,836	56,862
2	R01 GM24032-06 12840	STRYER, LUBERT OPTICAL STUDIES OF PROTEIN STRUCTURE AND FUNCTION	STANFORD UNIVERSITY	STANFORD CALIFORNIA	82	03-83	4	SSS		85,000	113,710
5	R01 GM24314-06 12930	MORRISON, GEORGE H ION MICROSCOPY IN BIOLOGY AND MEDICINE	CORNELL UNIVERSITY ITHACA	ITHACA NEW YORK	82	06-83	0	SSS		49,714	72,972

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5	R01 GM24361-05 21320	SADOWSKI, PAUL D ASSEMBLY AND RECOMBINATION IN PROKARYOTES AND EUKARYOTES	UNIVERSITY OF TORONTO	TORONTO	82 CANADA	12-82	1	SSS	86,199	86,199
5	R01 GM24472-05 13901	PRENTICE, ROSS L STATISTICAL METHODS FOR CASE-CONTROL STUDIES	FRED HUTCHINSON CANCER RESEARCH CENTER	SEATTLE	82 WASHINGTON	12-82	0	SSS	33,521	38,105
5	R01 GM24704-05 22300	SCHAFER, DAVID E PHYSICAL STUDIES OF ENTEROTOXIN-MEMBRANE INTERACTIONS	YALE UNIVERSITY	NEW HAVEN	82 CONNECTICUT	03-83	1	SSS	43,962	68,300
2	R01 GM24784-06 22450	SCARBOROUGH, GENE A ENERGY TRANSDUCTION IN NEUROSPORA PLASMA MEMBRANES	UNIVERSITY OF NORTH CAROLINA CHAPEL HILL	CHAPEL HILL	82 NORTH CAROLINA	05-83	4	SSS	101,937	132,800
3	R01 GM24862-04S1 22410	STEVENS, EUGENE S NIGMS SHARED INSTRUMENTATION GRANT	STATE UNIVERSITY NEW YORK BINGHAMTON	BINGHAMTON	82 NEW YORK	03-83	0	SSS	40,200	40,200
5	R01 GM24887-05 22450	HATEFI, YOUSSEF ELECTRON TRIBUTARIES OF THE RESPIRATORY CHAIN	SCRIPPS CLINIC AND RESEARCH FOUNDATION	LA JOLLA	82 CALIFORNIA	07-83	3	SSS	66,840	110,219
5	R01 GM24900-05 13420	AKESON, WAYNE H EXERCISE EFFECTS ON TENDON REPAIR	UNIVERSITY OF CALIFORNIA SAN DIEGO	LA JOLLA	81 CALIFORNIA	03-83	0	SSS	63,052	82,598
5	R01 GM25076-05 12990	LUCAS, JOE CHROMOSOMAL FLOW CYTOMETRY: DNA AND CENTROMERES	UNIVERSITY OF CALIFORNIA BERKELEY	BERKELEY	82 CALIFORNIA	03-83	0	SSS	108,441	183,591
3	R01 GM25125-03S1 22300	OJAKIAN, GEORGE K FREEZE-FRACTURE ELECTRON MICROSCOPY	DOWNSTATE MEDICAL CENTER	NEW YORK	80 NEW YORK	03-83	0	SSS	82,500	82,500
5	RC1 GM25271-05 12100	GEISSER, SEYMOUR SAMPLE REUSE AND PREDICTIVE METHODS	UNIVERSITY OF MINNESOTA OF MNPLS-ST PAUL	MINNEAPOLIS	82 MINNESOTA	07-83	1	SSS	43,797	60,878
5	R01 GM25431-05 12820	REGNIER, FRED E HIGH PERFORMANCE LIQUID CHROMATOGRAPHY OF PROTEINS	PURDUE UNIVERSITY WEST LAFAYETTE	WEST LAFAYETTE	82 INDIANA	06-83	0	SSS	68,446	90,033
5	R01 GM25504-03 13410	BAXTER, CHARLES R LEUKOCYTE FUNCTION IN BURN AND TRAUMA PATIENTS	UNIVERSITY OF TEXAS HLTH SCI CTR DALLAS	DALLAS	81 TEXAS	11-82	0	SSS	74,795	101,569

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5	R01 GM25826-04 12930	QUATE, CALVIN F ACOUSTIC MICROSCOPY FOR BIOMEDICAL APPLICATIONS	STANFORD UNIVERSITY	STANFORD CALIFORNIA	82	11-82	0	SSS 100,574	158,907
5	R01 GM26012-02 13700	HALPERIN, MAX EARLY STOPPING IN LONG-TERM CLINICAL TRIALS	GEORGE WASHINGTON UNIVERSITY	WASHINGTON DIST OF COL	81	11-82	0	SSS 37,937	56,147
2	R01 GM26016-04A1 13410	MANNICK, JOHN A IMMUNOLOGIC STUDIES OF PATIENTS AFTER TRAUMATIC INJURY	PETER BENT BRIGHAM HOSPITAL	BOSTON MASSACHUSETTS	82	01-83	4	SSS 140,664	168,234
2	R01 GM26108-04 21200	HAMLIN, JOYCE L CONTROL OF EUKARYOTIC DNA SYNTHESIS	UNIVERSITY OF VIRGINIA	CHARLOTTESVILLE CHARLOTTESVILLE VIRGINIA	82	11-82	2	SSS 83,594	120,311
2	R01 GM26462-04 22600	ALLEN, LELAND C ELECTRONIC STRUCTURE OF ENZYMES AND REDOX PROTEINS	PRINCETON UNIVERSITY	PRINCETON NEW JERSEY	82	03-83	2	SSS 48,580	79,671
5	R01 GM26551-03 11380	BENET, LESLIE Z PHARMACOKINETICS IN DISEASE STATES	UNIVERSITY OF CALIFORNIA	SAN FRANCISCO SAN FRANCISCO CALIFORNIA	81	03-83	0	SSS 86,452	113,252
5	P01 GM26625-04 22410	REINHOLD, VERNON N GLYCOCONJUGATE STRUCTURAL STUDIES/PROGRAM PROJECT	HARVARD UNIVERSITY	BOSTON MASSACHUSETTS	82	08-83	1	SSS 223,858	427,447
5	R01 GM26857-03 12990	SALZMAN, GARY C BIOMEDICAL APPLICATIONS OF LIGHT-SCATTER TECHNOLOGY	UNIVERSITY OF CALIFORNIA	BERKELEY BERKELEY CALIFORNIA	82	03-83	0	SSS 81,498	81,498
5	R01 GM26892-04 21100	HATTMAN, STANLEY M ANALYSIS OF DNA MODIFICATION BY MASS SPECTROMETRY	UNIVERSITY OF ROCHESTER	ROCHESTER NEW YORK	82	06-83	0	SSS 111,926	167,676
5	R01 GM26902-03 11890	LIETMAN, PAUL S ANTIBIOTIC TOXICITY: BIOCHEMICAL & CLINICAL PHARMACOLOGY	JOHNS HOPKINS UNIVERSITY	BALTIMORE MARYLAND	81	06-83	0	SSS 110,255	165,383
5	R01 GM27029-13 12840	RINEHART, KENNETH L, JR HIGH RESOLUTION MASS SPECTRA OF BIOORGANIC COMPOUNDS	UNIVERSITY OF ILLINOIS	URBANA-CHAMPAIGN URBANA ILLINOIS	82	04-83	1	SSS 75,607	107,664
5	R01 GM27039-03 12840	MC IVER, ROBERT T, JR FOURIER TRANSFORM MASS SPECTROMETRY	UNIVERSITY OF CALIFORNIA	IRVINE IRVINE CALIFORNIA	82	11-82	0	SSS 44,100	57,771

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5	P01 GM27057-03 22300	STOECKENIUS, WALTHER LIGHT-ENERGY AND SIGNAL-TRANSDUCTING MEMBRANES	UNIVERSITY OF CALIFORNIA	SAN FRANCISCO SAN FRANCISCO	82 CALIFORNIA	05-83	2	SSS 492,047	643,111
5	R01 GM27058-03 11910	TANABE, MASATO STEREOSPECIFIC SYNTHESIS OF STEROL SIDE CHAINS	SRI INTERNATIONAL	MENLO PARK	81 CALIFORNIA	02-83	0	SSS 46,827	89,694
5	R01 GM27135-03 11940	MORGAN, STEPHEN L PYROLYSIS GC-MS OF BIOMEDICALLY IMPORTANT COMPOUNDS	UNIVERSITY OF SOUTH CAROLINA AT COLUMBIA	COLUMBIA	82 SOUTH CAROLINA	07-83	0	SSS 31,217	45,296
5	R01 GM27241-03 21750	COHEN, STANLEY N GENE EXPRESSION IN HETEROSPECIFIC ENVIRONMENTS	STANFORD UNIVERSITY	STANFORD	82 CALIFORNIA	11-82	2	SSS 102,281	161,604
5	R01 GM27364-02 12840	FORSYTH, JAMES M INSTRUMENTATION FOR FAST BIOSTRUCTURAL KINETIC STUDIES	UNIVERSITY OF ROCHESTER	ROCHESTER	81 NEW YORK	01-83	0	SSS 90,461	134,898
5	P41 GM27405-03 12900	KAPLAN, JOHN E SCINTIGRAPHIC EVALUATION OF PHYSIOLOGICAL EVENTS	ALBANY MEDICAL COLLEGE	ALBANY	81 NEW YORK	01-83	0	SSS 15,000	22,200
5	P41 GM27408-03 12900	KAHAN, LAWRENCE CELL SORTING CORE FACILITY	UNIVERSITY OF WISCONSIN MADISON	MADISON	81 WISCONSIN	08-83	0	SSS 15,000	21,450
5	P41 GM27431-03 12900	HORTON, DEREK NMR SPECTROMETER FOR CORE USER GROUP	OHIO STATE UNIVERSITY	COLUMBUS	81 OHIO	12-82	0	SSS 13,555	18,570
5	P41 GM27433-03 12900	KRAUS, GEORGE A NIGMS SHARED INSTRUMENTATION PROGRAM--200 MHZ NMR	IOWA STATE UNIVERSITY OF SCIENCE & TECH	AMES	81 IOWA	08-83	0	SSS 22,171	26,505
5	P41 GM27543-02 12900	MAGUIRE, MICHAEL APPLICATION FOR AN ELECTRON MICROSCOPE	CASE WESTERN RESERVE UNIVERSITY	CLEVELAND	82 OHIO	11-82	1	SSS 10,870	16,414
5	P41 GM27558-03 12900	WILLIAMS, CHARLES H, JR SHARED FACILITY FOR PROTEIN SEQUENCING	UNIVERSITY OF MICHIGAN AT ANN ARBOR	ANN ARBOR	82 MICHIGAN	12-82	0	SSS 10,752	14,225
5	R01 GM27612-07 22300	SONENBERG, MARTIN ION TRANSPORT IN HORMONAL RESPONSIVENESS	SLOAN-KETTERING INSTITUTE FOR CANCER RES	NEW YORK	81 NEW YORK	06-83	0	SSS 74,042	109,582

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5	P01 GM27643-03 21780	BUKHARI, AHMAD I MOVABLE GENETIC ELEMENTS	COLD SPRING HARBOR LABORATORY	COLD SPRING HARB	NEW YORK	82	05-83	0	SSS	500,317	891,065
5	R01 GM27723-03 11760	BRUNENGRABER, HENRI CONTINUOUS MS MONITORING OF LIVER ALCOHOL METABOLISM	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	CAMBRIDGE	MASSACHUSETTS	82	03-83	0	SSS	46,457	72,723
5	P01 GM27859-03 22300	SATIR, PETER MEMBRANE-CYTOSKELETAL RELATIONSHIPS	YESHIVA UNIVERSITY	NEW YORK	NEW YORK	82	04-83	0	SSS	182,948	336,293
5	R01 GM27976-03 12100	ROBBINS, HERBERT E DESIGN OF CLINICAL TRIALS IN BIOSTATISTICS	COLUMBIA UNIVERSITY	NEW YORK	NEW YORK	82	06-83	0	SSS	54,586	92,632
5	P01 GM28002-03 22300	GLASER, LUIS MEMBRANE PROPERTIES, INTERACTIONS DURING DIFFERENTIATION	WASHINGTON UNIVERSITY	SAINT LOUIS	MISSOURI	82	07-83	0	SSS	80,558	124,865
5	R01 GM28030-03 13901	GARDINER, JOSEPH C STOPPING RULES IN COMPETING RISK ANALYSES	MICHIGAN STATE UNIVERSITY	EAST LANSING	MICHIGAN	82	06-83	0	SSS	7,553	10,650
5	R01 GM28072-03 11880	HOLFORD, NICHOLAS H CLINICAL PHARMACODYNAMICS--DIGOXIN AND QUINIDINE	UNIVERSITY OF CALIFORNIA SAN FRANCISCO	SAN FRANCISCO	CALIFORNIA	82	06-83	0	SSS	57,861	73,888
5	R01 GM28112-03 12820	WEBER, STEPHEN G CATALYTIC PHOTOELECTROCHEMICAL IMMUNOASSAY	UNIVERSITY OF PITTSBURGH	PITTSBURGH	PENNSYLVANIA	82	06-83	0	SSS	34,980	52,650
5	R01 GM28221-02 12990	PRESTON, KENDALL, JR COMPUTED TISSUE STEREOLOGY	CARNEGIE-MELLON UNIVERSITY	PITTSBURGH	PENNSYLVANIA	82	12-82	2	SSS	128,188	176,815
5	R01 GM28224-03 22300	ROBERTSON, J DAVID STRUCTURE OF PARA-CRYSTALLINE BIOLOGICAL MEMBRANES	DUKE UNIVERSITY	DURHAM	NORTH CAROLINA	82	06-83	0	SSS	101,822	152,733
5	R01 GM28242-03 13700	KLUGER, MATTHEW J THE ROLE OF ENDOGENOUS CRYOGEN IN THERMOREGULATION	UNIVERSITY OF MICHIGAN AT ANN ARBOR	ANN ARBOR	MICHIGAN	82	06-83	0	SSS	52,976	83,702
5	R01 GM28252-02 21100	BLATTNER, FREDERICK R APPLICATION OF MICROPROCESSORS TO NUCLEIC ACID DATA	UNIVERSITY OF WISCONSIN MADISON	MADISON	WISCONSIN	81	07-83	0	SSS	29,124	39,820

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5	R01 GM28253-03 12910	FRIZZELL, LEON A ULTRASONICALLY INDUCED CAVITATION IN TISSUES	UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN	URBANA ILLINOIS	82	08-83	0	SSS	61,146	87,072
5	R01 GM28254-03 12840	ENKE, CHRISTIE G STRUCTURE DETERMINATION BY TRIPLE QUAD MASS SPECTROMETRY	MICHIGAN STATE UNIVERSITY	EAST LANSING MICHIGAN	82	06-83	0	SSS	46,096	64,995
5	R01 GM28291-03 12840	VESTAL, MARVIN L PROTEIN SEQUENCING BY LIQUID FLOW MASS SPECTROMETRY	UNIVERSITY OF HOUSTON AT HOUSTON	HOUSTON TEXAS	82	08-83	0	SSS	34,911	45,384
5	R01 GM28306-03 12820	ANDERSON, C WILLIAM A HOMOGENEOUS VOLTAMMETRIC IMMUNOASSAY	DUKE UNIVERSITY	DURHAM NORTH CAROLINA	82	08-83	0	SSS	37,558	56,337
5	R01 GM28313-03 12930	ALLEN, ROBERT D LASER SCANNING PHASE MODULATION RESEARCH MICROSCOPE	DARTMOUTH COLLEGE	HANOVER NEW HAMPSHIRE	82	06-83	0	SSS	94,582	140,454
5	R01 GM28314-03 13901	PRENTICE, ROSS L STATISTICAL METHODS FOR FAILURE TIME DATA	FRED HUTCHINSON CANCER RESEARCH CENTER	SEATTLE WASHINGTON	82	07-83	0	SSS	68,370	78,474
5	R01 GM28336-02 21800	HOCHBERG, KENNETH J POPULATION PROCESSES IN GENETICS AND BIOLOGY	CASE WESTERN RESERVE UNIVERSITY	CLEVELAND OHIO	81	08-83	0	SSS	12,745	19,245
5	R01 GM28352-22 11910	DJERASSI, CARL MASS SPECTROMETRY IN ORGANIC AND BIOCHEMISTRY	STANFORD UNIVERSITY	STANFORD CALIFORNIA	82	02-83	1	SSS	119,227	188,379
5	R01 GM28364-02 12100	TURNBULL, BRUCE W STATISTICAL METHODS FOR HEALTH STUDIES	CORNELL UNIVERSITY ITHACA	ITHACA NEW YORK	82	01-83	1	SSS	27,497	43,364
5	R01 GM28405-03 12100	VAN RYZIN, JOHN R STATISTICAL INFERENCE FOR CENSORED SURVIVAL DATA	COLUMBIA UNIVERSITY	NEW YORK NEW YORK	82	03-83	1	SSS	45,828	76,808
5	R01 GM28423-03 11880	OIE, SVEIN DISPOSITION AND ABSORPTION IN DISEASE STATES	UNIVERSITY OF CALIFORNIA SAN FRANCISCO	SAN FRANCISCO CALIFORNIA	82	07-83	0	SSS	69,612	88,368
5	P01 GM28428-03 21400	CAVALLI-SFORZA, LUIGI L GENETICS RESEARCH PROJECT	STANFORD UNIVERSITY	STANFORD CALIFORNIA	82	04-83	0	SSS	285,015	450,324

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5	R01 GM28484-02 12840	MORRIS, MICHAEL D TIME/SPACE RESOLVED THERMAL BLOOMING SPECTROSCOPY	UNIVERSITY OF MICHIGAN AT ANN ARBOR	ANN ARBOR	82 MICHIGAN	12-82	1	SSS	29,793	47,073
5	R01 GM28572-02 21750	MARMUR, JULIUS REGULATION OF GENE EXPRESSION IN YEAST	YESHIVA UNIVERSITY	NEW YORK	82 NEW YORK	02-83	1	SSS	133,881	246,668
5	R01 GM28576-02 12820	FUNK, MAX O ANALYSIS OF THE PEROXIDES OF ARACHIDONATE METABOLISM	UNIVERSITY OF TOLEDO	TOLEDO	82 OHIO	11-82	0	SSS	13,598	20,560
5	R01 GM28581-02 12840	MEUZELAAR, HENDRIK L CELL AND TISSUE PROFILING BY AUTOMATED PYROLYSIS-MS	UNIVERSITY OF UTAH	SALT LAKE CITY	82 UTAH	02-83	1	SSS	68,340	96,168
5	R01 GM28611-02 22500	DESIDERIO, DOMINIC M COLLISION ACTIVATION-FD MASS SPECTROMETRY OF PEPTIDES	UNIVERSITY OF TENN CENTER HEALTH SCIEN	MEMPHIS	82 TENNESSEE	01-83	1	SSS	29,940	41,916
5	R01 GM28614-02 12930	TIVOL, WILLIAM F ELECTRON ENERGY-LOSS ELEMENT ANALYSIS OF WET CELLS	NEW YORK STATE DEPARTMENT OF HEALTH	ALBANY	82 NEW YORK	02-83	1	SSS	33,868	49,682
5	R01 GM28755-02 21320	GOLD, LAWRENCE M NUCLEIC ACID SEQUENCE ANALYSIS	UNIVERSITY OF COLORADO AT BOULDER	BOULDER	82 COLORADO	11-82	0	SSS	40,452	56,431
1	R01 GM28783-01 12820	IRVING, CHARLES S ASSESSMENT OF ALTERNATIVES IN 13C ISOTOPIC MEASUREMENTS	BAYLOR COLLEGE OF MEDICINE	HOUSTON	81 TEXAS	05-83	1	SSS	40,160	54,618
5	R01 GM28818-17 22400	GOLDBERG, NELSON D KREBS CYCLE AND CYCLIC NUCLEOTIDE CONTROL	UNIVERSITY OF MINNESOTA OF MNPLS-ST PAUL	MINNEAPOLIS	82 MINNESOTA	07-83	1	SSS	146,681	203,887
5	R01 GM28921-03 11770	WATSON, JACK T BIOCHEMICAL APPLICATIONS OF MASS SPECTROMETRY	MICHIGAN STATE UNIVERSITY	EAST LANSING	82 MICHIGAN	07-83	0	SSS	39,176	55,238
5	R01 GM29090-02 21600	LEINWAND, LESLIE A STUDY OF A HIGHLY ABUDNDANT SMALL RNA MOLECULE	YESHIVA UNIVERSITY	NEW YORK	82 NEW YORK	08-83	1	SSS	74,868	136,313
5	R01 GM29111-02 21480	RUDDLE, FRANK H HUMAN GENE LIBRARY	YALE UNIVERSITY	NEW HAVEN	82 CONNECTICUT	06-83	1	SSS	115,201	193,538

T	GRANT NUMBER / PROGRAM (FINE CODE)	INVESTIGATOR / PROJECT TITLE	GRANTEE INSTITUTION	CITY / STATE	FY	END-DATE	FUT-YRS AVAILABLE	IRG SUB	DOLLARS DIRECT	DOLLARS TOTAL
2	R01 GM29123-03 12200	OTHMER, HANS G DYNAMIC PATTERN IN CHEMICALLY-REACTING SYSTEMS	UNIVERSITY OF UTAH	SALT LAKE CITY UTAH	82	08-83	3	SSS 6	55,844	74,232
5	R01 GM29151-02 12840	VESTAL, MARVIN L LASER DESPORTION MASS SPECTROMETRY	UNIVERSITY OF HOUSTON AT HOUSTON	HOUSTON TEXAS	82	03-83	1	SSS	48,730	63,349
1	R01 GM29169-01A1 12930	FRANK, JOACHIM STRUCTURAL ANALYSIS OF MACROMOLECULAR ASSEMBLIES	NEW YORK STATE DEPARTMENT OF HEALTH	ALBANY NEW YORK	82	03-83	2	SSS	86,382	121,823
5	P01 GM29301-02 21750	KAFATOS, FOTIS C MOLECULAR AND DEVELOPMENTAL GENETICS OF DROSOPHILA	HARVARD UNIVERSITY	CAMBRIDGE MASSACHUSETTS	82	07-83	3	SSS	377,045	577,139
1	R01 GM29333-01 12100	HEWETT, JOHN E COMPARING GROUPS WHEN RANDOMIZATION IS NOT POSSIBLE	UNIVERSITY OF MISSOURI COLUMBIA	COLUMBIA MISSOURI	81	12-82	0	SSS	16,061	20,558
1	R01 GM29335-01A1 22450	GREEN, TERRENCE R ENZYMOLOGY OF SUPEROXIDE PRODUCTION BY HUMAN PMN'S	OREGON HEALTH SCIENCES UNIVERSITY	PORTLAND OREGON	82	04-83	2	SSS	33,271	42,007
1	R01 GM29647-01 12930	HEUSER, JOHN E 3-D VISUALIZATION OF MEMBRANE CIRCULATION	WASHINGTON UNIVERSITY	SAINT LOUIS MISSOURI	82	11-82	2	SSS	211,464	261,494
5	R01 GM29680-02 12910	VON RAMM, OLAF T HIGH-SPEED ULTRASOUND IMAGING	DUKE UNIVERSITY	DURHAM NORTH CAROLINA	82	06-83	1	SSS	90,047	135,071
5	R01 GM29745-02 12100	LAIRD, NAN M RANDOM EFFECTS MODELS FOR LONGITUDINAL STUDIES	HARVARD UNIVERSITY	BOSTON MASSACHUSETTS	82	08-83	1	SSS	47,220	83,107
1	R01 GM29772-01A1 13700	TORGERSON, WARREN S PAIN AND PAIN PATIENTS: SPECIFICATION AND CLASSIFICATION	JOHNS HOPKINS UNIVERSITY	BALTIMORE MARYLAND	82	03-83	2	SSS	62,735	93,003
5	P41 GM29786-03 12900	EISENBERG, DAVID S LA COMPUTER GRAPHICS TERMINAL FOR MOLECULAR BIOLOGY	UNIVERSITY OF CALIFORNIA LOS ANGELES	LOS ANGELES CALIFORNIA	82	08-83	0	SSS	14,550	20,181
5	R01 GM29812-08 21320	MC CLOSKEY, JAMES A STRUCTURAL AND ANALYTICAL STUDIES OF NA CONSTITUENTS	UNIVERSITY OF UTAH	SALT LAKE CITY UTAH	82	04-83	2	SSS	107,246	155,507

TABLE-3 RESEARCH GRANTS ACTIVE AS OF 09-30-82 BY INITIAL REVIEW GROUP

T	GRANT NUMBER / PROGRAM (FINE CODE)	INVESTIGATOR / PROJECT TITLE	GRANTEE INSTITUTION	CITY / STATE	FY	END-DATE	FUT-YRS AVAILABLE	IRG SUB	DOLLARS DIRECT	DOLLARS TOTAL
1	R01 GM29999-01 12100	HALPERIN, MAX GROWTH CURVE ESTIMATION WITH PROGRESSIVE CENSORING	GEORGE WASHINGTON UNIVERSITY	WASHINGTON DIST OF COL	82	01-83	1	SSS	38,450	46,051
1	R01 GM30012-01A1 12840	PEISACH, JACK PULSED EPR SPECTROSCOPY OF METALLOPROTEINS	YESHIVA UNIVERSITY	NEW YORK NEW YORK	82	07-83	2	SSS	249,576	294,741
5	R01 GM30032-02 21100	SCBELL, HENRY M DRUG-NUCLEIC ACID CRYSTALLINE COMPLEXES	UNIVERSITY OF ROCHESTER	ROCHESTER NEW YORK	82	07-83	1	SSS	128,389	223,397
1	R01 GM30054-01 21750	SAVAGEAU, MICHAEL A ANALYSIS OF MOLECULAR NETWORKS AND CONTROL SYSTEMS	UNIVERSITY OF MICHIGAN AT ANN ARBOR	ANN ARBOR MICHIGAN	82	03-83	3	SSS	46,468	71,679
1	P01 GM30287-01 NS 12840	SHULMAN, ROBERT G IN VIVO NMR STUDIES OF BRAIN, LIVER AND TUMORS	YALE UNIVERSITY	NEW HAVEN CONNECTICUT	82	01-83	2	SSS	637,778	746,022
1	R01 GM30331-01 HL 12840	ACKERMAN, JOSEPH J SURFACE COIL NMR BIOCHEMISTRY OF IN VIVO TISSUE	WASHINGTON UNIVERSITY	SAINT LOUIS MISSOURI	82	05-83	2	SSS	147,711	216,186
1	R01 GM30362-01 CA 11930	HANSCH, CORWIN H FUNDAMENTALS OF DRUG DESIGN	POMONA COLLEGE	CLAREMONT CALIFORNIA	82	04-83	2	SSS	68,060	106,065
1	P01 GM30387-01 22300	SPUDICH, JAMES A MEMBRANE CHANNELS, RECEPTORS AND ANCHORS	STANFORD UNIVERSITY	STANFORD CALIFORNIA	82	06-83	3	SSS	289,281	426,530
1	R01 GM30428-01 AI 22400	SOKATCH, JOHN R BIOCHEMISTRY AND GENETICS OF LIPOAMIDE DEHYDROGENASE	UNIVERSITY OF OKLAHOMA HLTH SCIENCES CTR	OKLAHOMA CITY OKLAHOMA	82	06-83	2	SSS	54,861	71,528
1	R13 GM30433-01 GM 21600	VAN HOLDE, KENSAL E GORDON RESEARCH CONFERENCE ON NUCLEOPROTEINS & CHROMATIN	UNIVERSITY OF RHODE ISLAND	KINGSTON RHODE ISLAND	82	04-83	0	SSS	3,000	3,000
1	R13 GM30579-01 GM 21320	MATHEWS, MICHAEL B RNA PROCESSING MEETINGS	COLD SPRING HARBOR LABORATORY	COLD SPRING HARB NEW YORK	82	03-83	0	SSS	5,000	5,000
1	R01 GM30604-01 12840	WILKINS, CHARLES L HIGH FIELD FT MASS SPECTROMETRY FOR BIOMOLECULES	UNIVERSITY OF CALIFORNIA RIVERSIDE	RIVERSIDE CALIFORNIA	82	05-83	2	SSS	329,287	356,883

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1	R01 GM30605-01 12840	STANDING, KENNETH G TIME-OF-FLIGHT MASS SPECTROMETRY OF LARGE BIOMOLECULES	UNIVERSITY OF MANITOBA	WINNIPEG	CANADA	82	05-83	2	SSS		59,068	59,068
1	R01 GM30719-01 MH 12200	KRONAUER, RICHARD E MATHEMATICAL MODELING OF HUMAN CIRCADIAN RHYTHMS	HARVARD UNIVERSITY	CAMBRIDGE	MASSACHUSETTS	82	04-83	2	SSS		28,800	44,352
1	R01 GM30943-01 AI 22400	ORME-JOHNSON, WILLIAM H ENZYMES AND REGULATORY PROTEINS OF DINITROGEN REDUCTION	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	CAMBRIDGE	MASSACHUSETTS	82	06-83	3	SSS	1	161,704	208,723
2	R01 GM31262-02 22200	KLEVECZ, ROBERT R TIMING OF MAMMALIAN CELL CYCLE EVENTS	CITY OF HOPE RESEARCH INSTITUTE	DUARTE	CALIFORNIA	82	11-82	3	SSS		106,136	139,420
1	R01 GM31656-01 21700	PAIGEN, KENNETH STUDIES OF MAMMALIAN GENE REGULATION	UNIVERSITY OF CALIFORNIA BERKELEY	BERKELEY	CALIFORNIA	82	04-83	1	SSS		278,743	364,719
1	R01 GM31716-01 22400	MC KENNA, CHARLES E BIOORGANIC STUDIES OF NITROGENASE	UNIVERSITY OF SOUTHERN CALIFORNIA	LOS ANGELES	CALIFORNIA	82	06-83	2	SSS		99,710	132,442
7	R01 GM31992-01 12840	CHANCE, BRITTON METALLOENZYMES, PROTEINS, AND MODELS	UNIVERSITY CITY SCIENCE CENTER	PHILADELPHIA	PENNSYLVANIA	82	01-83	1	SSS		86,149	149,455
7	P01 GM32099-01 13700	KANDEL, ERIC R CELLULAR ANALYSES OF BEHAVIOR	NEW YORK STATE OFFICE OF MENTAL HEALTH	ALBANY	NEW YORK	82	04-83	3	SSS		405,626	578,020
***	5	* CENTERS									2,873,943	4,461,055
***	151	NONCENTERS									19,106,307	27,741,612
***	156	TOTAL									21,980,250	32,202,667

TABLE-3 RESEARCH GRANTS ACTIVE AS OF 09-30-82 BY INITIAL REVIEW GROUP

T	GRANT NUMBER / PROGRAM (FINE CODE)	INVESTIGATOR / PROJECT TITLE	GRANTEE INSTITUTION	CITY / STATE	FY	END-DATE	FUT-YRS AVAILABLE	IRG SUB DOLLARS DIRECT	TOTAL
5	R01 GM28012-03 22200	BECK, STANLEY D PHOTOPERIODIC REGULATION OF INSECT DEVELOPMENT	UNIVERSITY OF WISCONSIN MADISON	MADISON WISCONSIN	82	07-83	0	TMP 41,664	59,580
1	R01 GM29994-01 22250	ROBERTS, THOMAS M AMOEBOID MOTILITY: A CELLULAR AND GENETIC APPROACH	FLORIDA STATE UNIVERSITY	TALLAHASSEE FLORIDA	82	12-82	2	TMP 38,327	50,[illegible]
***	0	* CENTERS						0	0
***	2	NONCENTERS						79,991	110,529
***	2	TOTAL						79,991	110,529
2	R01 GM15591-15 11790	TU, ANTHONY T HEMORRHAGIC AND NECROTIC TOXINS IN SNAKE VENOMS	COLORADO STATE UNIVERSITY	FORT COLLINS COLORADO	82	05-83	4	TOX 55,060	74,221
5	R01 GM19172-11 11790	TU, ANTHONY T SEA SNAKE VENOMS AND TOXINS	COLORADO STATE UNIVERSITY	FORT COLLINS COLORADO	82	08-83	0	TOX 47,795	64,943
2	R01 M19420-11 11790	TEPHLY, THOMAS R METHANOL POISONING	UNIVERSITY OF IOWA	IOWA CITY IOWA	82	11-82	4	TOX 88,291	121,462
2	R01 GM21784-08 11920	HANZLIK, ROBERT P THE ROLE OF EPOXIDES IN METABOLISM AND DRUG TOXICITY	UNIVERSITY OF KANSAS LAWRENCE	LAWRENCE KANSAS	82	07-83	2	TOX 67,183	89,679
5	R01 GM24144-05 11920	KAGAN, JACQUES PHOTOTOXICITY OF A-TERTHIENYL AND RELATED COMPOUNDS	UNIVERSITY OF ILLINOIS CHICAGO CIRCLE	CHICAGO ILLINOIS	82	08-83	0	TOX 54,815	82,516
5	R01 GM24173-06 11790	GEREN, COLLIS R VENOM COMPONENTS: ISOLATION, CHARACTERIZATION AND USE	UNIVERSITY OF ARKANSAS AT FAYETTEVILLE	FAYETTEVILLE ARKANSAS	82	06-83	0	TOX 41,897	57,399

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5	R01 GM25329-04 11790	CLARKSON, THOMAS W ANTIDOTES TO HEAVY METAL POISONING	UNIVERSITY OF ROCHESTER	ROCHESTER	NEW YORK	82	12-82	3	TOX	98,146	130,870
5	R01 GM26283-03 11890	KISSINGER, PETER T N-ACETYL-P-QUINONEIMINE IN ACETAMINOPHEN TOXICITY	PURDUE UNIVERSITY WEST LAFAYETTE	WEST LAFAYETTE	INDIANA	81	09-82	0	TOX	47,613	73,167
5	R01 GM26366-03 11890	WILEY, ROBERT A FURAN LUNG TOXINS: ORGAN SPECIFICITY AND METABOLISM	UNIVERSITY OF KANSAS LAWRENCE	LAWRENCE	KANSAS	81	11-82	0	TOX	37,509	52,380
2	R01 GM26548-04 11760	SCHENKMAN, JOHN B ACTIVE OXYGEN GENERATION BY HEPATIC MICROSOMES	UNIVERSITY OF CONNECTICUT HEALTH CENTER	FARMINGTON	CONNECTICUT	82	08-83	4	TOX	76,621	107,237
5	R01 GM26775-03 11790	KOECHEL, DANIEL A RENAL NECROSIS INDUCED BY CHEMICALS	MEDICAL COLLEGE OF OHIO AT TOLEDO	TOLEDO	OHIO	81	06-83	0	TOX	45,598	63,345
5	R01 GM29277-02 11890	RUSSELL, FINDLAY E VENOMS OF ANIMALS OF UNITED STATES AND YUGOSLAVIA	UNIVERSITY OF ARIZONA	TUCSON	ARIZONA	82	12-82	1	TOX	54,530	77,440
1	R01 GM29583-01A1 ES 22500	PETERING, DAVID H STRUCTURE AND REACTIVITY OF METALLOTHIONINES	UNIVERSITY OF WISCONSIN MILWAUKEE	MILWAUKEE	WISCONSIN	82	03-83	2	TOX	90,260	120,472
1	R01 GM31289-01 11790	FOX, JAY W CHARACTERIZATION & INHIBITION OF SNAKE HEMORRHAGIC TOXIN	UNIVERSITY OF VIRGINIA CHARLOTTESVILLE	CHARLOTTESVILLE	VIRGINIA	82	07-83	2	TOX	35,900	44,990
***	0	* CENTERS								0	0
***	14	NONCENTERS								841,218	1,160,121
***	14	TOTAL								841,218	1,160,121

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5	R01 GM28778-21 / 22200	EAKIN, RICHARD M STUDIES IN FINE STRUCTURE	UNIVERSITY OF CALIFORNIA	BERKELEY BERKELEY	82 CALIFORNIA	08-83	0	VID	47,217	67,001
***	0	* CENTERS							0	0
***	1	NONCENTERS							47,217	67,001
***	1	TOTAL							47,217	67,001
5	R01 GM17078-14 / 21750	ECHOLS, G HARRISON, JR GENETIC & CHEMICAL STUDIES OF PHAGE LAMBDA DEVELOPMENT	UNIVERSITY OF CALIFORNIA	BERKELEY BERKELEY	82 CALIFORNIA	08-83	1	VR	127,691	181,194
5	R01 GM17980-13 / 21320	KING, JONATHAN A BACTERIOPHAGE ASSEMBLY AND ITS GENETIC CONTROL	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	CAMBRIDGE	82 MASSACHUSETTS	08-83	0	VR	93,293	141,339
5	R01 GM18973-11 / 21200	BOTSTEIN, DAVID MOLECULAR GENETICS WITH PHAGE P22	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	CAMBRIDGE	82 MASSACHUSETTS	12-82	2	VR	51,228	74,850
5	R01 GM19963-10 / 21750	GOLD, LAWRENCE M REGULATION OF BACTERIOPHAGE T4 GENE EXPRESSION	UNIVERSITY OF COLORADO AT BOULDER	BOULDER	82 COLORADO	12-82	0	VR	121,619	169,659
5	R01 GM20373-08 / 21200	STAHL, FRANKLIN W RECOMBINATIONAL INTERMEDIATES IN PHAGE LAMBDA	UNIVERSITY OF OREGON	EUGENE	81 OREGON	06-83	0	VR	52,839	71,397
5	R01 GM21176-09 / 21100	BAUER, WILLIAM R VIRAL AND PLASMID DNA STRUCTURE, PROTEIN INTERACTIONS	STATE UNIVERSITY NEW YORK STONY BROOK	STONY BROOK	82 NEW YORK	11-82	2	VR	64,376	97,061
5	R01 GM21872-08 / 21200	STUDIER, F WILLIAM REPLICATION OF T7 DNA	ASSOCIATED UNIV-BROOKHAVEN NATL LAB	UPTON	82 NEW YORK	01-83	0	VR	50,504	80,806

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5	R01 GM21975-06 21320	CASJENS, SHERWOOD R BACTERIOPHAGE P22 ASSEMBLY AND ITS GENETIC CONTROL	UNIVERSITY OF UTAH	SALT LAKE CITY UTAH	81	10-82	0	VR 33,665	48,548
5	R01 GM21999-06 21320	WIBERG, JOHN S REGULATION OF PROTEIN SYNTHESIS BY BACTERIOPHAGE T4	UNIVERSITY OF ROCHESTER	ROCHESTER NEW YORK	82	11-82	2	VR 85,943	141,806
5	R01 GM23638-06 21200	GOORHA, RAKESH M DNA REPLICATION OF FROG VIRUS 3	ST. JUDE CHILDREN'S RESEARCH HOSPITAL	MEMPHIS TENNESSEE	82	06-83	0	VR 65,760	91,209
5	R01 GM27064-03 21280	SIEGEL, ALBERT MAPPING THE TOBACCO RATTLE VIRUS GENOME	WAYNE STATE UNIVERSITY	DETROIT MICHIGAN	82	12-82	0	VR 50,773	71,132
5	R23 GM27098-03 13450	POLLARD, RICHARD B HERPESVIRUSES AND IMMUNITY IN BURNED CHILDREN	UNIVERSITY OF TEXAS MED BR GALVESTON	GALVESTON TEXAS	82	12-82	0	VR 34,726	46,880
5	R01 GM27143-03 21320	GOLDSTEIN, RICHARD MECHANISM OF THE SWITCH BETWEEN TWO CAPSID SIZES	HARVARD UNIVERSITY	BOSTON MASSACHUSETTS	82	11-82	0	VR 26,102	51,108
5	R01 GM27148-03 21280	BLUMENTHAL, THOMAS OVERLAPPING GENES OF RNA PHAGES	INDIANA UNIVERSITY BLOOMINGTON	BLOOMINGTON INDIANA	82	11-82	0	VR 41,434	58,785
5	R01 GM28294-03 21320	ROBERTSON, HUGH D THE ROLE OF RNA IN THE REGULATION OF GENE EXPRESSION	ROCKEFELLER UNIVERSITY	NEW YORK NEW YORK	82	07-83	0	VR 72,953	111,116
5	R01 GM30760-02 21750	ZIFF, EDWARD B ADENOVIRUS-2 MESSENGER RNA SYNTHESIS STRUCTURAL STUDIES	NEW YORK UNIVERSITY	NEW YORK NEW YORK	82	08-83	3	VR 83,865	123,893
1	R01 GM31276-01 CA 21750	WOLD, WILLIAM S ADENOVIRUS EXPRESSION VECTOR	ST. LOUIS UNIVERSITY	SAINT LOUIS MISSOURI	82	07-83	2	VR 44,018	63,437
9	R01 GM31452-04 21200	YOUNG, CHARLES S THE MECHANISMS OF ADENOVIRUS RECOMBINATION	COLUMBIA UNIVERSITY	NEW YORK NEW YORK	82	04-83	2	VR 64,565	104,493
7	R01 GM31693-01 21200	SMITH, GERALD R MOLECULAR ANALYSIS OF HOSTSPOTS OF GENETIC RECOMBINATION	FRED HUTCHINSON CANCER RESEARCH CENTER	SEATTLE WASHINGTON	82	12-82	2	VR 25,568	28,756

***	0	* CENTERS	0	0
***	19	NONCENTERS	1,190,922	1,757,469
***	19	TOTAL	1,190,922	1,757,469

****	22	* CENTERS	8,463,446	11,947,634
****	2,857	NONCENTERS	197,676,667	284,701,730
****	2,879	TOTAL	206,140,113	296,649,364

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CELLULAR BASIS OF DISEASE SECTION										
BASIC PATHOBIOLOGY										
5	R01 GM27589-02	CHAN, TEH-SHENG	UNIVERSITY OF TEXAS MED BR	GALVESTON	TEXAS	82	01-83	1	46,818	63,204
	22100	MOLECULAR PATHOLOGY OF INHERITED IMMUNODEFICIENCY								
**	0	*CENTERS (P50)							0	0
**	0	PROGRAM PROJECTS (P01)							0	0
**	1	REGULAR PROJECTS (R01)							46,818	63,204
**	0	ALL OTHERS (P30, P41, R13, R23, R25)							0	0
**	1	TOTALS							46,818	63,204

TABLE-4 RESEARCH GRANTS ACTIVE AS OF 09-30-82 BY PROGRAM AREA AND GRANT NUMBER

T	GRANT NUMBER / PROG-AREA	INVESTIGATOR / PROJECT TITLE	GRANTEE INSTITUTION	CITY	FY / STATE	END-DATE	FUT-YRS AVAILABLE	IRG / DIRECT	SUD / TOTAL
		CELLULAR BASIS OF DISEASE SECTION CELL REGULATION, DIFFERENTIATION AND GROWTH							
5	R01 GM08229-22 22200	VOLCANI, BENJAMIN E BIOCHEMICAL STUDIES OF SILICEOUS SKELETAL FORMATION	UNIVERSITY OF CALIFORNIA SAN DIEGO	LA JOLLA	82 CALIFORNIA	04-83	1 119,515	GMB 156,255	
5	R01 GM10138-20 22200	GREGG, JAMES H CELL. SLIME MOLD INTERACTION/REGULATION/DIFFERENTIATION	UNIVERSITY OF FLORIDA	GAINESVILLE	82 FLORIDA	12-82	0 49,250	CBY 71,117	
5	R01 GM18538-12 22200	KUEHN, GLENN D POLYAMINES AND GENE CONTROL IN PHYSARUM POLYCEPHALUM	NEW MEXICO STATE UNIVERSITY LAS CRUCES	LAS CRUCES	82 NEW MEXICO	08-83	2 45,449	MBY 71,733	
5	R01 GM19363-19 22200	GERHART, JOHN C STUDIES OF CELLULAR REGULATORY MECHANISMS	UNIVERSITY OF CALIFORNIA BERKELEY	BERKELEY	82 CALIFORNIA	08-83	1 116,975	REB 161,939	
5	R01 GM19536-10 22200	HASTINGS, JOHN W MOLECULAR AND CELLULAR MECHANISMS OF BIOLOGICAL RHYTHMS	HARVARD UNIVERSITY	CAMBRIDGE	82 MASSACHUSETTS	11-82	0 57,715	CBY 85,641	
5	R01 GM19548-11 22200	HOROWITZ, SAMUEL B REGULATION OF NUCLEAR-CYTOPLASMIC SOLUTE TRANSPORT	MICHIGAN CANCER FOUNDATION	DETROIT	82 MICHIGAN	07-83	1 88,690	CP 134,043	
2	R01 GM19559-10 22200	PARKINSON, JOHN S GENETICS OF CHEMOTACTIC BEHAVIOR IN ESCHERICHIA COLI	UNIVERSITY OF UTAH	SALT LAKE CITY	82 UTAH	05-83	4 74,199	MG 106,239	
5	R01 GM19698-11 22200	SETLOW, PETER DEGRADATION REACTIONS IN SPORE GERMINATION	UNIVERSITY OF CONNECTICUT HEALTH CENTER	FARMINGTON	82 CONNECTICUT	08-83	1 96,811	MBC 139,476	
5	R01 GM19851-11 22200	HIRSH, DAVID I GENETIC CONTROL OF DEVELOPMENT	UNIVERSITY OF COLORADO AT BOULDER	BOULDER	82 COLORADO	08-83	2 156,574	GEN 219,047	
5	R01 GM19957-10 22200	DWORKIN, MARTIN CELL INTERACTIONS AND DEVELOPMENT IN MYXOCOCCUS XANTHUS	UNIVERSITY OF MINNESOTA OF MNPLS-ST PAUL	MINNEAPOLIS	82 MINNESOTA	05-83	3 65,166	MBC 88,626	
2	R01 GM20024-09 HD 22200	FREEMAN, GARY L THE BASIS FOR AND ROLE OF SYMMETRY DURING EMBRYOGENESIS	UNIVERSITY OF TEXAS AUSTIN	AUSTIN	82 TEXAS	06-83	2 55,754	CBY 71,943	
2	R01 GM20509-10 22200	ZUSMAN, DAVID R BIOCHEMICAL STUDIES OF DEVELOPMENT IN BACTERIA	UNIVERSITY OF CALIFORNIA BERKELEY	BERKELEY	82 CALIFORNIA	07-83	4 72,316	MG 99,219	
5	R01 GM20648-09 22200	BUTLER, WARREN L PHOTORECEPTOR PIGMENTS IN PHOTORESPONSIVE ORGANISMS	UNIVERSITY OF CALIFORNIA SAN DIEGO	LA JOLLA	82 CALIFORNIA	06-83	0 52,543	BBCA 69,935	
5	R01 GM21823-08 22200	HASELKORN, ROBERT DIFFERENTIATION IN NITROGEN-FIXING BLUE-GREEN ALGAE	UNIVERSITY OF CHICAGO	CHICAGO	82 ILLINOIS	04-83	0 73,964	MBY 113,375	
5	R01 GM21841-08 22200	THORNER, JEREMY W CELL-CELL INTERACTIONS OF A SIMPLE EUKARYOTE	UNIVERSITY OF CALIFORNIA BERKELEY	BERKELEY	82 CALIFORNIA	12-82	1 85,033	GEN 111,393	
7	R01 GM21842-07 22200	BRODY, STUART BIOCHEMISTRY OF CIRCADIAN RHYTHMS IN NEUROSPORA	UNIVERSITY OF CALIFORNIA SAN DIEGO	LA JOLLA	82 CALIFORNIA	11-82	2 79,962	MBC 102,125	

CELLULAR BASIS OF DISEASE SECTION
CELL REGULATION, DIFFERENTIATION AND GROWTH

T	GRANT NUMBER / PROG-AREA	INVESTIGATOR / PROJECT TITLE	GRANTEE INSTITUTION	CITY	FY / STATE	END-DATE	FUT-YRS AVAILABLE	DIRECT	IRG SUB DOLLARS TOTAL
5	R01 GM22500-07 / 22200	LERNER, RICHARD A THE CELLULAR SLIME MOLD AS A MODEL FOR HUMAN DEVELOPMENT	SCRIPPS CLINIC AND RESEARCH FOUNDATION	LA JOLLA	82 CALIFORNIA	04-83	1	86,400	CBY 142,474
5	R01 GM23349-06 / 22200	YUND, MARY A HORMONAL REGULATION OF GENE ACTIVITY IN DROSOPHILA	UNIVERSITY OF CALIFORNIA BERKELEY	BERKELEY	82 CALIFORNIA	03-83	0	67,080	GEN 87,875
5	R01 GM23441-06 / 22200	KAISER, A DALE CONTROL OF MULTICELLULAR DEVELOPMENT IN MYXOBACTERIA	STANFORD UNIVERSITY	STANFORD	82 CALIFORNIA	12-82	2	71,945	MBC 111,208
5	R01 GM23445-06 / 22200	BERNS, MICHAEL W CELL DIVISION STUDIED BY LASER	UNIVERSITY OF CALIFORNIA IRVINE	IRVINE	82 CALIFORNIA	02-83	2	63,957	CTY 83,784
5	R01 GM23516-06 / 22200	WALSH, CHARLES J GENE REGULATION DURING DIFFERENTIATION OF NAEGLERIA	UNIVERSITY OF PITTSBURGH	PITTSBURGH	82 PENNSYLVANIA	08-83	0	54,193	MBY 80,657
5	R01 GM23547-06 / 22200	ROSEN, STEVEN D CELL SURFACE LECTINS AND INTERCELLULAR ADHESION	UNIVERSITY OF CALIFORNIA SAN FRANCISCO	SAN FRANCISCO	82 CALIFORNIA	01-83	0	77,785	CBY 101,588
2	R01 GM23750-07 / CA 22200	REDDY, JANARDIAN K BIOLOGIC STUDIES WITH LIVER PEROXISOME PROLIFERATORS	NORTHWESTERN UNIVERSITY	CHICAGO	82 ILLINOIS	06-83	4	110,306	PTHB 146,427
5	R01 GM23807-05 / 22200	ELLINGSON, JOHN S METABOLISM OF PHOSPHOLIPIDS IN SECONDARY LYSOSOMES	WEST VIRGINIA UNIVERSITY	MORGANTOWN	82 WEST VIRGINIA	08-83	1	53,067	CTY 75,112
5	R01 GM23892-05 / 22200	BECHTOL, KATHLEEN B IMMUNOCHEMICAL APPROACH TO SPERMATOGENESIS	WISTAR INSTITUTE OF ANATOMY AND BIOLOGY	PHILADELPHIA	82 PENNSYLVANIA	08-83	1	76,016	HED 126,672
5	R01 GM23910-06 / 22200	SHAPIRO, BENNETT M MOLECULAR EVENTS IN FERTILIZATION	UNIVERSITY OF WASHINGTON	SEATTLE	82 WASHINGTON	07-83	2	85,235	CBY 113,875
2	R01 GM23928-06 / 22200	ALBERTS, BRUCE M BIOCHEMISTRY OF GENE EXPRESSION IN HIGHER EUKARYOTES	UNIVERSITY OF CALIFORNIA SAN FRANCISCO	SAN FRANCISCO	82 CALIFORNIA	07-83	4	86,466	MBY 104,101
5	R01 GM24172-06 / 22200	KIRK, DAVID L GENETIC CONTROL OF MORPHOGENESIS IN VOLVOX	WASHINGTON UNIVERSITY	SAINT LOUIS	82 MISSOURI	07-83	0	58,044	CBY 89,968
5	R01 GM24375-06 / 22200	SHIMIZU, NOBUYOSHI GENETIC CONTROL OF MAMMALIAN CELL SURFACE FUNCTIONS	UNIVERSITY OF ARIZONA	TUCSON	82 ARIZONA	06-83	2	72,368	MGN 100,007
5	R01 GM24571-05 / 22200	PARDEE, ARTHUR B BIOCHEMISTRY OF G0/G1 REGULATION IN ANIMAL CELLS	SIDNEY FARBER CANCER INSTITUTE	BOSTON	82 MASSACHUSETTS	04-83	1	86,015	CP 147,118
5	R01 GM24604-03 / 22200	MICHAELS, JOHN E EFFECTS OF DIAZOOXONORLEUCINE ON COLON SURFACE CELLS	UNIVERSITY OF CINCINNATI	CINCINNATI	81 OHIO	12-82	0	25,742	CBY 35,524
5	R01 GM24797-05 / 22200	HERSCHMAN, HARVEY R INITIATION OF CELLULAR PROLIFERATION	UNIVERSITY OF CALIFORNIA LOS ANGELES	LOS ANGELES	82 CALIFORNIA	12-82	2	80,717	CTY 105,429

TABLE-4 RESEARCH GRANTS ACTIVE AS OF 09-30-82 BY PROGRAM AREA AND GRANT NUMBER

T	GRANT NUMBER / PROG-AREA	INVESTIGATOR / PROJECT TITLE	GRANTEE INSTITUTION	CITY	FY / STATE	END-DATE	FUT-YRS AVAILABLE DOLLARS DIRECT	TOTAL	IRG SUB
	CELLULAR BASIS OF DISEASE SECTION CELL REGULATION, DIFFERENTIATION AND GROWTH								
5	R01 GM24943-05 22200	HORVITZ, HOWARD R CONTROL OF CELL DIVISION IN THE NEMATODE C ELEGANS	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	CAMBRIDGE	82 MASSACHUSETTS	03-83	3 40,725		CBY 57,001
5	R01 GM24989-05 22200	VALLEE, BERT L THE FUNCTION AND DETECTION OF ZINC IN CELL BIOLOGY	HARVARD UNIVERSITY	BOSTON	82 MASSACHUSETTS	05-83	0 108,583		BMT 168,304
5	P01 GM25080-05 22200	KLEIN, CLAUDETTE BIOGENESIS OF A CHEMOTACTIC SYSTEM IN D. DISCOIDEUM	ST. LOUIS UNIVERSITY	SAINT LOUIS	82 MISSOURI	08-83	1 74,075		CP 110,363
2	R01 GM25243-05 HD 22200	WARD, SAMUEL GENETIC SPECIFICATION OF CELL MORPHOLOGY	CARNEGIE INSTITUTION OF WASHINGTON D C	BALTIMORE	82 MARYLAND	08-83	4 59,695		CBY 95,468
2	R01 GM25588-04 22200	BERGER, EDWARD A A SURFACE LECTIN AND CELL COHESION IN DICTYOSTELIUM	WORCESTER FDN FOR EXPER BIOLOGY	SHREWSBURY	82 MASSACHUSETTS	03-83	2 79,574		CP 129,716
2	R01 GM25832-04 22200	SOLL, DAVID R THE REGULATION OF TIMING IN DEVELOPING SYSTEMS	UNIVERSITY OF IOWA	IOWA CITY	82 IOWA	08-83	3 71,126		CTY 96,026
2	R01 GM26150-04 22200	GOODENOUGH, URSULA W FLAGELLAR MEMBRANE ADHESION AND SEXUAL SIGNALING	WASHINGTON UNIVERSITY	SAINT LOUIS	82 MISSOURI	03-83	4 115,581		CP 160,610
5	R01 GM26165-03 22200	JULIANO, RUDOLPH L THE MOLECULAR BASES OF CELL ADHESION	UNIVERSITY OF TEXAS HLTH SCI CTR HOUSTON	HOUSTON	82 TEXAS	08-83	0 44,893		CP 61,952
5	R01 GM26228-03 22200	WEIGEL, PAUL H CELL RECOGNITION AND RESPONSES TO EXTERNAL CARBOHYDRATES	UNIVERSITY OF TEXAS MED BR GALVESTON	GALVESTON	82 TEXAS	11-82	0 45,301		CBY 60,631
2	R01 GM26429-17 22200	HELMSTETTER, CHARLES E BIOCHEMISTRY AND RADIATION EFFECT DURING THE CELL CYCLE	ROSWELL PARK MEMORIAL INSTITUTE	BUFFALO	82 NEW YORK	06-83	2 55,320		MBC 78,681
5	R01 GM26484-03 22200	RUSTAD, RONALD C CELL CYCLE DEPENDENT CHANGES IN RADIATION SENSITIVITY	CASE WESTERN RESERVE UNIVERSITY	CLEVELAND	81 OHIO	03-83	0 46,609		RAD 73,294
5	R01 GM26632-03 22200	DIMOND, RANDALL L REGULATION OF DIVERGENT PATHWAYS OF DEVELOPMENT	UNIVERSITY OF WISCONSIN MADISON	MADISON	81 WISCONSIN	02-83	0 77,115		GEN 86,957
2	R01 GM26734-04 22200	PAINE, PHILIP L MECHANISMS OF NUCLEOCYTOPLASMIC PROTEIN DISTRIBUTION	MICHIGAN CANCER FOUNDATION	DETROIT	82 MICHIGAN	06-83	3 64,672		MBY 108,683
2	R01 GM26743-04 22200	MALLER, JAMES L CONTROL OF CELL DIVISION BY CYCLIC AMP	UNIVERSITY OF COLORADO HLTH SCIENCES CTR	DENVER	82 COLORADO	06-83	2 58,610		CP 73,031
5	R01 GM26843-03 22200	INOUYE, MASAYORI MORPHOGENESIS AND GENE EXPRESSION	STATE UNIVERSITY NEW YORK STONY BROOK	STONY BROOK	82 NEW YORK	03-83	0 62,383		MBC 94,084
2	R01 GM26968-04 22200	NOLL, HANS CELL SURFACE PROTEINS IN EMBRYOGENESIS	NORTHWESTERN UNIVERSITY	EVANSTON	82 ILLINOIS	07-83	2 101,640		CP 133,703

CELLULAR BASIS OF DISEASE SECTION
CELL REGULATION, DIFFERENTIATION AND GROWTH

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	5 R01 GM27153-03 22200	MC KANNA, JAMES A E.M. STUDIES OF CELLS AND EPIDERMAL GROWTH FACTOR	VANDERBILT UNIVERSITY	NASHVILLE	TENNESSEE	82	06-83	0	66,752	CP 107,471
	5 R01 GM27203-02 22200	WANG, JOHN L MOLECULAR ANALYSIS OF GROWTH REGULATORY FACTOR	MICHIGAN STATE UNIVERSITY	EAST LANSING	MICHIGAN	82	01-83	1	46,246	CP 62,747
	5 R01 GM27220-03 22200	BARNES, LARRY D MODULATION OF THE CELL CYCLE BY CYCLIC NUCLEOTIDES	UNIVERSITY OF TEXAS HLTH SCI CTR SAN ANT	SAN ANTONIO	TEXAS	82	12-82	0	33,143	CBY 45,074
	5 R01 GM27629-03 22200	TYSON, JOHN J CONTROL OF NUCLEAR DIVISION IN PHYSARUM POLYCEPHALUM	VIRGINIA POLYTECHNIC INST AND ST UNIV	BLACKSBURG	VIRGINIA	82	03-83	1	30,269	CBY 43,285
	5 R01 GM27892-03 22200	HANNA, MICHAEL H ESTABLISHMENT OF MULTICELLULARITY IN P. VIOLACEUM	RENSSELAER POLYTECHNIC INSTITUTE	TROY	NEW YORK	82	03-83	0	29,221	CBY 46,754
	5 R01 GM27969-03 22200	FOREST, CHARLENE L FLAGELLAR SEXUAL SIGNALING IN CONDITIONAL MUTANTS	BROOKLYN COLLEGE	NEW YORK	NEW YORK	82	07-83	0	42,595	CBY 68,834
	5 R01 GM27993-03 22200	RHODES, R KENT PHYSIOLOGICAL SIGNIFICANCE OF A & B CHAIN COLLAGEN	UNIVERSITY OF ALABAMA IN BIRMINGHAM	BIRMINGHAM	ALABAMA	82	06-83	0	56,202	PBC 75,905
	5 R01 GM28007-03 22200	DEVREOTES, PETER N CAMP SIGNALS MEDIATING AGGREGATION IN DICTYOSTELIUM	JOHNS HOPKINS UNIVERSITY	BALTIMORE	MARYLAND	82	06-83	0	43,937	CBY 65,906
	5 R01 GM28012-03 22200	BECK, STANLEY D PHOTOPERIODIC REGULATION OF INSECT DEVELOPMENT	UNIVERSITY OF WISCONSIN MADISON	MADISON	WISCONSIN	82	07-83	0	41,664	TMP 59,580
	5 R01 GM28208-03 22200	COOPER, STEPHEN CAMP AND THE DIFFERENTIATION OF DICTYOSTELIUM DISCOIDEUM	UNIVERSITY OF MICHIGAN AT ANN ARBOR	ANN ARBOR	MICHIGAN	82	07-83	0	41,360	CTY 65,349
	5 R01 GM28577-02 22200	BALIAN, GARY INTERACTION OF CONNECTIVE TISSUE MOLECULES WITH CELLS	UNIVERSITY OF VIRGINIA CHARLOTTESVILLE	CHARLOTTESVILLE	VIRGINIA	82	01-83	1	35,523	PBC 51,058
	5 R01 GM28644-02 22200	PANTAZIS, NICHOLAS J FUNCTION AND MOLECULAR STRUCTURE OF GROWTH FACTORS	UNIVERSITY OF IOWA	IOWA CITY	IOWA	82	11-82	1	43,051	CP 59,410
	5 R01 GM28657-02 22200	DAVID, JOHN D ROLE OF CELL SURFACE PROTEINS IN MYOGENESIS	UNIVERSITY OF MISSOURI COLUMBIA	COLUMBIA	MISSOURI	82	11-82	1	39,863	CTY 54,014
	5 R01 GM28778-21 22200	EAKIN, RICHARD M STUDIES IN FINE STRUCTURE	UNIVERSITY OF CALIFORNIA BERKELEY	BERKELEY	CALIFORNIA	82	08-83	0	47,217	VID 67,001
	5 R01 GM28842-03 22200	KAUFMAN, STEPHEN J IMMUNOCHEMICAL ANALYSIS OF MYOBLAST DIFFERENTIATION	UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN	URBANA	ILLINOIS	82	07-83	0	58,889	CTY 83,858
	5 R01 GM29040-02 22200	DAMJANOV, IVAN ACTIVATION OF PRIMORDIAL GERM CELLS TO FORM TERATOMAS	HAHNEMANN MED COL & HOSP OF PHILADELPHIA	PHILADELPHIA	PENNSYLVANIA	82	04-83	1	55,467	PTHB 85,704

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CELLULAR BASIS OF DISEASE SECTION										
CELL REGULATION, DIFFERENTIATION AND GROWTH										
5	R01 GM29130-02	BODE, HANS R	UNIVERSITY OF CALIFORNIA IRVINE	IRVINE	CALIFORNIA	82	03-83	1	28,849	CBY 37,792
	22200	PATTERN FORMATION IN REGENERATING PIECES OF HYDRA								
5	R01 GM29131-02	LILIEN, JACK E	UNIVERSITY OF WISCONSIN MADISON	MADISON	WISCONSIN	82	03-83	1	61,223	CP 87,549
	22200	SURFACE TRANSFERASE: PROPERTIES & ROLE IN CELL ADHESION								
5	R01 GM29156-02	DIMOND, RANDALL L	UNIVERSITY OF WISCONSIN MADISON	MADISON	WISCONSIN	82	03-83	1	62,530	MBY 89,034
	22200	SYNTHESIS AND LOCALIZATION OF LYSOSOMAL ENZYMES								
1	R01 GM29460-01A1	LAFFLER, THOMAS G	NORTHWESTERN UNIVERSITY	CHICAGO	ILLINOIS	82	08-83	2	80,723	GEN 113,566
	22200	MOLECULAR EVENTS IN THE MITOTIC CYCLE								
5	R01 GM29481-02	TAYLOR, BARRY L	LOMA LINDA UNIVERSITY	LOMA LINDA	CALIFORNIA	82	08-83	1	59,622	MBC 85,852
	22200	SENSORY TRANSDUCTION IN BACTERIA								
1	R01 GM29756-01	REED, PETER W	VANDERBILT UNIVERSITY	NASHVILLE	TENNESSEE	82	05-83	2	46,010	BIO 71,085
	AI 22200	ROLE OF CALCIUM IN STIMULUS-ACTIVATION OF NEUTROPHILS								
1	R01 GM29776-01	SUSSMAN, MAURICE	UNIVERSITY OF PITTSBURGH	PITTSBURGH	PENNSYLVANIA	82	01-83	2	65,435	MBC 91,144
	22200	BIOCHEMISTRY/GENETICS OF MORPHOGENESIS IN D DISCOIDEUM								
5	R01 GM29792-05	HILLE, MERRILL B	UNIVERSITY OF WASHINGTON	SEATTLE	WASHINGTON	82	01-83	1	49,759	MBY 65,949
	22200	ACTIVATION OF PROTEIN SYNTHESIS IN EGG AND EMBRYOS								
1	R01 GM30236-01	RIGNEY, DAVID R	INSTITUTE FOR CANCER RESEARCH	PHILADELPHIA	PENNSYLVANIA	82	01-83	2	94,765	CP 126,045
	22200	COMPARISON OF SIBLING CELLS								
1	R01 GM30442-01	PETERSEN, NANCY S	CALIFORNIA INSTITUTE OF TECHNOLOGY	PASADENA	CALIFORNIA	82	06-83	1	29,080	GEN 43,038
	22200	SURVIVAL FROM HEAT SHOCK AS A SCREEN								
1	R01 GM30461-01	LO, CECILIA W	UNIVERSITY OF PENNSYLVANIA	PHILADELPHIA	PENNSYLVANIA	82	04-83	2	81,159	GEN 113,744
	22200	GAP JUNCTIONAL COMMUNICATION IN DROSOPHILA IMAGINAL DISC								
1	R01 GM30647-01	LENHOFF, HOWARD M	UNIVERSITY OF CALIFORNIA IRVINE	IRVINE	CALIFORNIA	82	04-83	2	62,241	CBY 75,878
	22200	MODEL FOR BASEMENT MEMBRANE-EPITHELIAL CELL INTERACTIONS								
1	R01 GM30758-01	SLUDER, GREENFIELD	WORCESTER FDN FOR EXPER BIOLOGY	SHREWSBURY	MASSACHUSETTS	82	04-83	2	66,575	MBY 99,831
	CA 22200	RNA IN FORMATION, FUNCTION & REPRODUCTION OF CENTROSOME								
1	R01 GM30861-01	WATTERSON, DANIEL M	VANDERBILT UNIVERSITY	NASHVILLE	TENNESSEE	82	03-83	2	53,800	CP 83,121
	22200	MOLECULAR BASIS OF CALCIUM ACTION IN CELL PROCESSES								
1	R01 GM30982-01	GOODENOUGH, URSULA W	WASHINGTON UNIVERSITY	SAINT LOUIS	MISSOURI	82	06-83	2	37,887	CTY 58,725
	22200	FERTILIZATION MECHANISMS IN CHLAMYDOMONAS								
1	R01 GM31004-01	TSIEN, ROGER Y	UNIVERSITY OF CALIFORNIA BERKELEY	BERKELEY	CALIFORNIA	82	06-83	2	82,040	CP 100,043
	CA 22200	ROLE OF INTRACELLULAR FREE CALCIUM IN CELL PROLIFERATION								

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CELLULAR BASIS OF DISEASE SECTION									
CELL REGULATION, DIFFERENTIATION AND GROWTH									
1	R01 GM31048-01 / 22200	LIN, JIM J GOLI-ASSOCIATED, HEAT-SHOCK PROTEIN	COLD SPRING HARBOR LABORATORY	COLD SPRING HARB	82 / NEW YORK	08-83	2	57,069	CBY 101,640
1	R01 GM31098-01 / 22200	NELSON, DAVID L CALMODULIN IN TRICHOCYST ASSEMBLY AND STRUCTURE	UNIVERSITY OF WISCONSIN MADISON	MADISON	82 / WISCONSIN	06-83	2	58,264	BIO 1 80,380
1	R01 GM31184-01 / CA 22200	SANDO, JULIANNE J CELLULAR MECHANISM OF ACTION OF PHORBOL ESTER PROMOTERS	UNIVERSITY OF VIRGINIA CHARLOTTESVILLE	CHARLOTTESVILLE	82 / VIRGINIA	06-83	2	54,171	PBC 69,526
2	R01 GM31262-02 / 22200	KLEVECZ, ROBERT R TIMING OF MAMMALIAN CELL CYCLE EVENTS	CITY OF HOPE RESEARCH INSTITUTE	DUARTE	82 / CALIFORNIA	11-82	3	106,136	SSS 139,420
1	R01 GM31373-01 / 22200	KENDE, HANS J SITE OF ACTION OF CYTOKININS	MICHIGAN STATE UNIVERSITY	EAST LANSING	82 / MICHIGAN	06-83	1	29,242	CP 41,231

**	0	*CENTERS (P50)	0	0
**	0	PROGRAM PROJECTS (P01)	0	0
**	85	REGULAR PROJECTS (R01)	5,529,133	7,858,972
**	0	ALL OTHERS (P30, P41, R13, R23, R25)	0	0
**	85	TOTALS	5,529,133	7,858,972

TABLE-4 RESEARCH GRANTS ACTIVE AS OF 09-30-82 BY PROGRAM AREA AND GRANT NUMBER

T GRANT NUMBER / PROG-AREA	INVESTIGATOR / PROJECT TITLE	GRANTEE INSTITUTION	CITY	FY / STATE	END-DATE	FUT-YRS AVAILABLE	DOLLARS DIRECT	DOLLARS TOTAL	IRG SUB
CELLULAR BASIS OF DISEASE SECTION									
CELL ORGANIZATION, MOTILITY AND DIVISION									
5 R01 GM13745-17 22250	NICKLAS, R BRUCE ANALYSIS AND CONTROL OF CHROMOSOME MOVEMENT	DUKE UNIVERSITY	DURHAM	82 NORTH CAROLINA	12-82	3	54,119	81,179	CBY
5 R01 GM14363-17 22250	KANE, ROBERT E CELL PROTEINS IN DIVISION AND EARLY DEVELOPMENT	UNIVERSITY OF HAWAII AT MANOA	HONOLULU	82 HAWAII	08-83	3	38,421	53,825	CBY
5 R01 GM14642-15 22250	ROSENBAUM, JOEL L SYNTHESIS AND ASSEMBLY OF FLAGELLAR PROTEINS	YALE UNIVERSITY	NEW HAVEN	82 CONNECTICUT	07-83	3	115,512	191,748	MBY
5 R01 GM17132-14 22250	LUCK, DAVID J BIOCHEMICAL GENETICS OF MICROTUBULES	ROCKEFELLER UNIVERSITY	NEW YORK	82 NEW YORK	08-83	2	119,388	187,439	GEN
2 R01 GM18541-11 22250	BYERS, BRECK E MOLECULAR CYTOLOGY OF THE CELL CYCLE	UNIVERSITY OF WASHINGTON	SEATTLE	82 WASHINGTON	05-83	4	90,205	120,039	GEN
5 R01 GM18711-11 22250	BROKAW, CHARLES J MECHANISMS OF MOVEMENT OF SIMPLE SPERM FLAGELLA	CALIFORNIA INSTITUTE OF TECHNOLOGY	PASADENA	82 CALIFORNIA	07-83	0	70,984	104,336	CBY
5 R01 GM19272-08 22250	WALTERS, MARTA S MEIOSIS: A REVISED SEQUENCE OF EVENTS IN PROPHASE	SANTA BARBARA BOTANIC GARDEN	SANTA BARBARA	81 CALIFORNIA	09-82	0	34,020	48,989	CBY
5 R01 GM20644-10 22250	STEPHENS, RAYMOND E THE FORMATION AND FUNCTION OF MICROTUBULES	MARINE BIOLOGICAL LABORATORY	WOODS HOLE	82 MASSACHUSETTS	08-83	0	61,954	123,908	MBY
5 R01 GM20690-09 22250	WARNER, FRED D CILIARY MOTION: DYNEIN BEHAVIOR AND MICROTUBULE SLIDING	SYRACUSE UNIVERSITY AT SYRACUSE	SYRACUSE	82 NEW YORK	05-83	2	61,462	100,177	CBY
5 R01 GM21527-08 22250	LINCK, RICHARD W FLAGELLAR MICROTUBULES: MOLECULAR STRUCTURE-FUNCTION	HARVARD UNIVERSITY	BOSTON	82 MASSACHUSETTS	12-82	1	78,425	151,161	MBY
5 R01 GM21931-07 22250	BROKAW, CHARLES J COMPUTER SIMULATION OF SLIDING FILAMENT SYSTEMS	CALIFORNIA INSTITUTE OF TECHNOLOGY	PASADENA	82 CALIFORNIA	03-83	1	13,872	20,531	CBY
2 R01 GM22214-07 22250	OLMSTED, JOANNA B CELLULAR CONTROL OF NEURONAL CYTOSKELETON ASSEMBLY	UNIVERSITY OF ROCHESTER	ROCHESTER	82 NEW YORK	02-83	4	83,117	133,154	MBY
2 R01 GM22289-08 22250	LIN, SHIN CYTOCHALASINS, ACTIN FILAMENTS, AND CELL MOTILITY	JOHNS HOPKINS UNIVERSITY	BALTIMORE	82 MARYLAND	04-83	4	111,952	159,878	CTY
5 R01 GM22407-06 22250	REBHUN, LIONEL I CONTROL OF SULFHYDRYLS OF TUBULIN AND OTHER PROTEINS	UNIVERSITY OF VIRGINIA CHARLOTTESVILLE	CHARLOTTESVILLE	81 VIRGINIA	12-82	0	51,327	74,424	MBY
2 R01 GM22497-07 22250	SHERLINE, PETER REGULATION OF MICROTUBULE ASSEMBLY IN VIVO	UNIVERSITY OF CONNECTICUT HEALTH CENTER	FARMINGTON	82 CONNECTICUT	08-83	2	70,545	96,733	CBY
2 R01 GM23238-07 22250	CANDE, W ZACHEUS FUNCTIONAL MODEL FOR MITOSIS IN CELL LINES	UNIVERSITY OF CALIFORNIA BERKELEY	BERKELEY	82 CALIFORNIA	06-83	4	82,910	114,549	CBY

CELLULAR BASIS OF DISEASE SECTION
CELL ORGANIZATION, MOTILITY AND DIVISION

T	GRANT NUMBER / PROG-AREA	INVESTIGATOR / PROJECT TITLE	GRANTEE INSTITUTION	CITY	STATE	FY	END-DATE	FUT-YRS AVAILABLE	IRG SUB DOLLARS DIRECT	TOTAL
2	R01 GM23476-04 / 22250	LUDUENA, RICHARD F CONTROL OF MICROTUBULE ASSEMBLY IN VITRO AND IN VIVO	UNIVERSITY OF TEXAS HLTH SCI CTR SAN ANT	SAN ANTONIO	TEXAS	82	08-83	2	65,754	CBY 85,563
5	R01 GM23883-06 / 22250	WATERSTON, ROBERT H MOLECULAR GENETICS OF MUSCLE ASSEMBLY IN C. ELEGANS	WASHINGTON UNIVERSITY	SAINT LOUIS	MISSOURI	82	03-83	2	64,974	CTY 99,335
2	R01 GM24251-06 / 22250	HARRIS, ALBERT K CONTROL AND GUIDANCE OF TISSUE CELL LOCOMOTION	UNIVERSITY OF NORTH CAROLINA CHAPEL HILL	CHAPEL HILL	NORTH CAROLINA	82	08-83	2	72,593	CP 91,938
2	R01 GM24364-04 / 22250	SALMON, EDWARD D MECHANISMS OF MITOTIC SPINDLE ASSEMBLY AND FUNCTION	UNIVERSITY OF NORTH CAROLINA CHAPEL HILL	CHAPEL HILL	NORTH CAROLINA	82	11-82	4	97,233	CBY 120,066
5	R01 GM24444-05 / 22250	FULTON, CHANDLER M CELL DIFFERENTIATION AND ORGANELLE MORPHOGENESIS	BRANDEIS UNIVERSITY	WALTHAM	MASSACHUSETTS	82	03-83	0	88,542	CBY 141,417
5	R01 GM24599-05 / 22250	YARBROUGH, LYNWOOD R MOLECULAR MECHANISMS OF TUBULIN-LIGAND INTERACTIONS	UNIVERSITY OF KANSAS COL HLTH SCI & HOSP	KANSAS CITY	KANSAS	82	04-83	1	50,356	BBCA 66,841
5	R01 GM24800-05 / 22250	EDELSTEIN, STUART J STRUCTURE AND ASSEMBLY OF TUBULIN	CORNELL UNIVERSITY ITHACA	ITHACA	NEW YORK	82	01-83	3	57,908	CBY 90,743
5	R01 GM24878-03 / 22250	BURCHILL, BROWER R ROLE OF THE CILIATE CORTEX IN METABOLIC REGULATION	UNIVERSITY OF KANSAS LAWRENCE	LAWRENCE	KANSAS	81	12-82	0	22,680	CBY 30,051
2	R01 GM24958-04 / 22250	PURICH, DANIEL L MOLECULAR MECHANISMS OF MICROTUBULE INTERACTIONS	UNIVERSITY OF CALIFORNIA SANTA BARBARA	SANTA BARBARA	CALIFORNIA	82	05-83	2	69,486	CBY 87,818
5	R01 GM24992-17 / 22250	BURTON, PAUL R EM STUDIES OF SPERM AND NERVE: FOCUS ON MICROTUBULES	UNIVERSITY OF KANSAS LAWRENCE	LAWRENCE	KANSAS	81	11-82	0	30,340	CBY 40,013
5	R01 GM25062-05 / 22250	BORISY, GARY G MECHANISM AND CONTROL OF MICROTUBULE ASSEMBLY	UNIVERSITY OF WISCONSIN MADISON	MADISON	WISCONSIN	82	03-83	0	85,860	MBY 119,820
5	R01 GM25120-06 / 22250	HEPLER, PETER K ROLE OF CALCIUM AND MEMBRANES IN MITOSIS	UNIVERSITY OF MASSACHUSETTS AMHERST	AMHERST	MASSACHUSETTS	82	08-83	2	67,862	CBY 97,230
5	R01 GM25240-06 / 22250	SPUDICH, JAMES A CONTROL OF ASSEMBLY AND INTERACTION OF MYOSIN	STANFORD UNIVERSITY	STANFORD	CALIFORNIA	82	08-83	3	86,055	CTY 143,363
2	R01 GM25461-05 / 22250	JACOBSON, BRUCE S PLASMA MEMBRANES INVERTED ON BEADS--ACTIN BINDING	UNIVERSITY OF MASSACHUSETTS AMHERST	AMHERST	MASSACHUSETTS	82	07-83	2	66,417	CP 92,930
5	R01 GM25638-05 / 22250	WILLIAMS, ROBLEY C, JR ASSEMBLY AND DISASSEMBLY OF CYTOPLASMIC MICROTUBULES	VANDERBILT UNIVERSITY	NASHVILLE	TENNESSEE	82	06-83	3	71,658	BBCB 114,149
5	R01 GM25653-05 / 22250	SANGER, JOSEPH W ANALYSIS OF CELL DIVISION AND CELL MOTILITY	UNIVERSITY OF PENNSYLVANIA	PHILADELPHIA	PENNSYLVANIA	82	08-83	2	88,271	CBY 144,217

TABLE-4 RESEARCH GRANTS ACTIVE AS OF 09-30-82 BY PROGRAM AREA AND GRANT NUMBER

T GRANT NUMBER PROG-AREA	INVESTIGATOR PROJECT TITLE	GRANTEE INSTITUTION	CITY	STATE	FY	END-DATE	FUT-YRS AVAILABLE	DIRECT	IRG SUB DOLLARS TOTAL
CELLULAR BASIS OF DISEASE SECTION									
CELL ORGANIZATION, MOTILITY AND DIVISION									
2 R01 GM25813-04 22250	CONDEELIS, JOHN S INTERACTIONS OF ACTIN CYTOSKELETON WITH PLASMA MEMBRANE	YESHIVA UNIVERSITY	NEW YORK	NEW YORK	82	11-82	4	69,232	CBY 121,255
2 R01 GM26091-04 22250	BRYAN, JOSEPH CHEMISTRY AND LOCALIZATION OF ACTIN GELLING PROTEINS	BAYLOR COLLEGE OF MEDICINE	HOUSTON	TEXAS	82	11-82	4	94,562	CBY 128,604
5 R01 GM26121-04 22250	BAJER, ANDREW S MITOSIS EXPERIMENTAL STUDIES	UNIVERSITY OF OREGON	EUGENE	OREGON	82	03-83	1	70,757	CBY 93,015
5 R01 GM26132-05 22250	POLLARD, THOMAS D ACTOMYOSIN-MICROTUBULE INTERACTIONS IN CELL DIVISION	JOHNS HOPKINS UNIVERSITY	BALTIMORE	MARYLAND	82	06-83	0	86,262	CBY 128,816
5 R01 GM26155-05 22250	MURPHY, DOUGLAS B THE MOLECULAR MECHANISM OF INTRACELLULAR MOTILITY	JOHNS HOPKINS UNIVERSITY	BALTIMORE	MARYLAND	82	07-83	2	61,429	MBY 92,144
2 R01 GM26338-05 22250	POLLARD, THOMAS D MOLECULAR MECHANISM OF CELLULAR MOTILITY	JOHNS HOPKINS UNIVERSITY	BALTIMORE	MARYLAND	82	08-83	4	110,405	MBY 150,618
2 R01 GM26392-04 22250	DEWEY, MAYNARD M LIMULUS THICK FILAMENT STRUCTURE	STATE UNIVERSITY NEW YORK	STONY BROOK STONY BROOK	NEW YORK	82	06-83	2	73,501	CBY 108,939
2 R01 GM26701-04 22250	VALLEE, RICHARD B STRUCTURE, PHOSPHORYLATION & FUNCTION OF MAPS	WORCESTER FDN FOR EXPER BIOLOGY	SHREWSBURY	MASSACHUSETTS	82	06-83	2	81,415	CBY 128,733
2 R01 GM26726-04 22250	JOHNSON, KENNETH A KINETIC ANALYSIS OF THE DYNEIN ATPASE MECHANISM	PENNSYLVANIA STATE UNIVERSITY UNIV PARK	UNIVERSITY PARK	PENNSYLVANIA	82	06-83	2	92,529	CBY 118,950
2 R01 GM26732-04 22250	FARRELL, KEVIN W CONTROL OF MICROTUBULE PROPERTIES AND FUNCTIONS	UNIVERSITY OF CALIFORNIA SANTA BARBARA	SANTA BARBARA	CALIFORNIA	82	06-83	2	74,948	CBY 101,504
5 R01 GM26784-03 22250	REBHUN, LIONEL I ISOLATION AND CHARACTERIZATION OF MITOTIC ORGANELLES	UNIVERSITY OF VIRGINIA CHARLOTTESVILLE	CHARLOTTESVILLE	VIRGINIA	81	12-82	0	56,394	CTY 80,421
5 R01 GM26802-03 22250	MULLINS, JAMES M STRUCTURAL AND CHEMICAL ANALYSIS OF THE MIDBODY	CATHOLIC UNIVERSITY OF AMERICA	WASHINGTON	DIST OF COL	81	02-83	0	19,399	CBY 29,226
5 R01 GM26875-04 22250	KIRSCHNER, MARC W BIOCHEMICAL STUDIES OF MITOSIS	UNIVERSITY OF CALIFORNIA SAN FRANCISCO	SAN FRANCISCO	CALIFORNIA	82	11-82	3	155,975	MBY 203,087
5 R01 GM26973-04 22250	GOROVSKY, MARTIN A CONTROL OF GENE ACTIVITY AND ORGANELLE BIOGENESIS	UNIVERSITY OF ROCHESTER	ROCHESTER	NEW YORK	82	06-83	0	80,001	MBY 137,722
5 R01 GM27124-03 22250	PICKETT-HEAPS, J D CELL DIVISION STUDIES USING THE DIATOM SPINDLE	UNIVERSITY OF COLORADO AT BOULDER	BOULDER	COLORADO	82	02-83	1	47,391	CBY 64,096
5 R01 GM27284-03 22250	ALLEN, ROBERT D CYTOPLASMIC RHEOLOGY OF MOTILE CELLS	DARTMOUTH COLLEGE	HANOVER	NEW HAMPSHIRE	82	08-83	0	57,645	CBY 84,566

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	CELLULAR BASIS OF DISEASE SECTION CELL ORGANIZATION, MOTILITY AND DIVISION								
5	R01 GM27288-03 22250	LA FOUNTAIN, JAMES R, JR THE KINETOCHORE: A MOLECULAR CYTOCHEMICAL APPROACH	STATE UNIVERSITY OF NEW YORK AT BUFFALO	BUFFALO	82 NEW YORK	12-82	0	39,185	CBY 58,028
5	R01 GM27324-03 22250	PORTER, KEITH R CYTOPLASMIC GROUND SUBSTANCE: FORM, FUNCTION, RESPONSE	UNIVERSITY OF COLORADO AT BOULDER	BOULDER	82 COLORADO	02-83	0	78,620	CBY 109,675
5	R01 GM27510-03 22250	SPUDICH, JAMES A ACTIN ASSEMBLY BEFORE AND AFTER FERTILIZATION	STANFORD UNIVERSITY	STANFORD	82 CALIFORNIA	11-82	0	65,868	CBY 104,071
5	R01 GM27894-03 22250	SOLOMON, FRANK E CYTOPLASMIC DETERMINATION OF DETAILED CELL MORPHOLOGY	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	CAMBRIDGE	82 MASSACHUSETTS	03-83	0	62,192	CBY 101,379
5	R01 GM27903-03 22250	TAMM, SIDNEY L CELL MOTILITY, MEMBRANE FLUIDITY AND MECHANOTRANSDUCTION	BOSTON UNIVERSITY	BOSTON	82 MASSACHUSETTS	04-83	2	81,613	CBY 106,468
5	R01 GM28189-03 22250	MARGOLIS, ROBERT L REGULATION OF THE MICROTUBULE STEADY-STATE	FRED HUTCHINSON CANCER RESEARCH CENTER	SEATTLE	82 WASHINGTON	06-83	0	47,098	CBY 50,904
5	R01 GM28277-03 22250	FERAMISCO, JAMES R INJECTION OF FLUORESCENTLY LABELLED PROTEINS INTO CELLS	COLD SPRING HARBOR LABORATORY	COLD SPRING HARB	82 NEW YORK	06-83	0	44,450	CBY 79,165
5	R01 GM28307-03 22250	BEGG, DAVID A CELLULAR AND MOLECULAR BASIS OF CYTOKINESIS	HARVARD UNIVERSITY	BOSTON	82 MASSACHUSETTS	06-83	0	52,370	CBY 102,540
5	R01 GM28397-03 22250	WOLOSEWICK, JOHN J THE CYTOPLASMIC GROUND SUBSTANCE IN TRANSFORMED CELLS	UNIVERSITY OF ILLINOIS MEDICAL CENTER	CHICAGO	82 ILLINOIS	03-83	0	38,284	CBY 60,106
5	R01 GM28553-02 22250	ERICKSON, HAROLD P IMMUNO-ELECTRON MICROSCOPY OF CYTOSKELETAL FILAMENTS	DUKE UNIVERSITY	DURHAM	82 NORTH CAROLINA	04-83	1	48,004	MBY 69,806
5	R01 GM28660-02 22250	WISE, DWAYNE A CONTROL OF CHROMOSOME DISTRIBUTION AT MEIOSIS	MISSISSIPPI STATE UNIVERSITY	MISSISSIPPI STAT	82 MISSISSIPPI	11-82	1	30,994	CBY 39,547
5	R01 GM28702-02 22250	PIPERNO, GIANNI MICROTUBULES OF MITOTIC APPARATUS	ROCKEFELLER UNIVERSITY	NEW YORK	82 NEW YORK	01-83	1	52,533	CBY 79,720
5	R01 GM28830-06 22250	HITCHCOCK, SARAH E MOLECULAR BIOLOGY OF REGULATION OF CONTRACTION	CARNEGIE-MELLON UNIVERSITY	PITTSBURGH	82 PENNSYLVANIA	08-83	0	37,577	CTY 57,584
5	R01 GM28886-02 22250	HAIMO, LEAH T THE POLARITY AND FUNCTION OF MICROTUBULES	UNIVERSITY OF CALIFORNIA RIVERSIDE	RIVERSIDE	82 CALIFORNIA	03-83	1	42,023	CBY 55,050
5	R01 GM29228-02 22250	MORRIS, N RONALD THE GENETICS OF MICROTUBULE ASSEMBLY AND FUNCTION	RUTGERS THE STATE UNIV NEW BRUNSWICK	NEW BRUNSWICK	82 NEW JERSEY	05-83	3	95,064	MBY 157,331
5	R01 GM29261-03 22250	SHAY, JERRY W TUBULIN AND THE REGULATION OF STEROID BIOGENESIS	UNIVERSITY OF TEXAS HLTH SCI CTR DALLAS	DALLAS	82 TEXAS	08-83	0	31,943	CBY 43,283

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	CELLULAR BASIS OF DISEASE SECTION CELL ORGANIZATION, MOTILITY AND DIVISION											
	5 R01 GM29323-03 22250	DEDMAN, JOHN R BIOLOGICAL ROLE OF INTRACELLULAR CA2+-BINDING PROTEINS	UNIVERSITY OF TEXAS HLTH SCI CTR HOUSTON	HOUSTON	TEXAS	82	08-83	1	CP		58,410	80,606
	5 R01 GM29477-02 22250	HOWARD, THOMAS H STUDY OF ACTIN IN POLYMORPHONUCLEAR LEUKOCYTES	UNIVERSITY OF VIRGINIA CHARLOTTESVILLE	CHARLOTTESVILLE	VIRGINIA	82	08-83	1	CBY		39,644	57,484
	1 R01 GM29496-01A1 HD 22250	TASH, JOSEPH S PROTEIN PHOSPHORYLATION IN SPERM FLAGELLAR MOTILITY	BAYLOR COLLEGE OF MEDICINE	HOUSTON	TEXAS	82	06-83	2	CTY		75,856	100,446
	5 R01 GM29503-02 22250	STEPHENS, RAYMOND E MECHANOSENSITIVITY AND THE CONTROL OF CILIARY MOVEMENT	MARINE BIOLOGICAL LABORATORY	WOODS HOLE	MASSACHUSETTS	82	06-83	1	CBY		41,976	83,952
	5 R01 GM29513-02 22250	CLEVELAND, DON W MICROTUBULE REGULATION: CONTROL OF EXPRESSION OF TUBULI	JOHNS HOPKINS UNIVERSITY	BALTIMORE	MARYLAND	82	06-83	1	MBY		65,083	96,125
	5 R01 GM29630-02 22250	FARMER, STEPHEN R CELL CONFIGURATION & SYNTHESIS OF TUBULIN & ACTIN	BOSTON UNIVERSITY	BOSTON	MASSACHUSETTS	82	06-83	1	MBY		51,251	92,047
	5 R01 GM29723-02 22250	CLARKE, MARGARET CHEMISTRY AND FUNCTION OF DICTYOSTELIUM CALMODULIN	YESHIVA UNIVERSITY	NEW YORK	NEW YORK	82	06-83	1	CTY		64,139	119,299
	5 R01 GM29834-02 22250	WILLIAMS, ROBLEY C, JR BIOCHEMICAL INVESTIGATION OF NEUROFILAMENTS	VANDERBILT UNIVERSITY	NASHVILLE	TENNESSEE	82	03-83	1	BBCB		33,431	50,561
	5 R01 GM29860-02 22250	BURRIDGE, KEITH W NONMUSCLE ALPHA-ACTININ AND ACTIN-MEMBRANE INTERACTION	UNIVERSITY OF NORTH CAROLINA CHAPEL HILL	CHAPEL HILL	NORTH CAROLINA	82	03-83	0	CBY		85,295	119,072
	1 R01 GM29955-01 22250	CABRAL, FERNANDO R GENETIC APPROACH TO MICROTUBULE FUNCTION IN CHO CELLS	UNIVERSITY OF TEXAS HLTH SCI CTR HOUSTON	HOUSTON	TEXAS	82	01-83	2	CBY		70,471	86,344
	1 R01 GM29994-01 22250	ROBERTS, THOMAS M AMOEBOID MOTILITY: A CELLULAR AND GENETIC APPROACH	FLORIDA STATE UNIVERSITY	TALLAHASSEE	FLORIDA	82	12-82	2	TMP		38,327	50,949
	1 R01 GM30209-01 22250	BERLIN, RICHARD D SURFACE FUNCTIONS DURING MITOSIS	UNIVERSITY OF CONNECTICUT HEALTH CENTER	FARMINGTON	CONNECTICUT	82	01-83	4	CP		95,860	135,622
	1 R01 GM30211-01 22250	BARCLAY, STEPHEN L GENETIC ANALYSIS OF CYTOSKELETAL FUNCTIONS	UNIVERSITY OF ILLINOIS CHICAGO CIRCLE	CHICAGO	ILLINOIS	82	03-83	2	GEN		69,128	80,050
	1 R01 GM30213-01 22250	MC INTOSH, J RICHARD FUNCTIONS OF MITOTIC SPINDLE PROTEINS	UNIVERSITY OF COLORADO AT BOULDER	BOULDER	COLORADO	82	03-83	2	CBY		67,571	91,694
	7 R01 GM30295-01 22250	CARRAWAY, KERMIT L MEMBRANE-CYTOSKELETON INTERACTIONS	UNIVERSITY OF MIAMI	MIAMI	FLORIDA	81	11-82	0	CBY		30,000	57,260
	1 R01 GM30348-01 22250	HUANG, BESSIE P GENETIC STUDIES OF FLAGELLAR DYNEIN ARMS	BAYLOR COLLEGE OF MEDICINE	HOUSTON	TEXAS	82	02-83	2	GEN		105,295	136,257

TABLE-4 RESEARCH GRANTS ACTIVE AS OF 09-30-82 BY PROGRAM AREA AND GRANT NUMBER

T	GRANT NUMBER / PROG-AREA	INVESTIGATOR / PROJECT TITLE	GRANTEE INSTITUTION	CITY	FY / STATE	END-DATE	FUT-YRS AVAILABLE	DIRECT	IRG SUB DOLLARS	TOTAL
	CELLULAR BASIS OF DISEASE SECTION CELL ORGANIZATION, MOTILITY AND DIVISION									
1	R01 GM30385-01 22250	BORISY, GARY G MOLECULAR ANALYSIS OF MITOTIC SPINDLE COMPONENTS	UNIVERSITY OF WISCONSIN MADISON	MADISON	82 WISCONSIN	01-83	4	67,134	MBY	87,854
9	R01 GM30401-06 HD 22250	GIBBONS, IAN R PROPERTIES OF DYNEIN ISOENZYMES	UNIVERSITY OF HAWAII AT MANOA	HONOLULU	82 HAWAII	03-83	4	89,335	CBY	117,362
1	R01 GM30450-01 22250	FORMAN, DAVID S PERMEABILIZED CELL MODEL OF SALTATORY ORGANELLE MOVEMENT	U.S. UNIFORMED SERVICES UNIV OF HLTH SCI	BETHESDA	82 MARYLAND	04-83	2	57,855	CBY	57,855
1	R01 GM30598-01 22250	TAYLOR, KENNETH A ELECTRON MICROSCOPE STUDIES ON MUSCLE	DUKE UNIVERSITY	DURHAM	82 NORTH CAROLINA	04-83	2	61,188	BBCB	86,568
5	R01 GM30603-02 22250	BRETSCHER, ANTHONY P MICROFILAMENT ORGANIZATION AND MEMBRANE ATTACHMENT	CORNELL UNIVERSITY ITHACA	ITHACA	82 NEW YORK	08-83	0	41,003	CBY	56,764
7	R01 GM30626-01 22250	WITMAN, GEORGE B, III MOLECULAR MECHANISM OF FLAGELLA MOTILITY AND ASSEMBLY	WORCESTER FDN FOR EXPER BIOLOGY	SHREWSBURY	81 MASSACHUSETTS	11-82	0	60,065	MBY	94,121
1	R01 GM30814-01 22250	MURRAY, JOHN M STUDY OF MEMBRANE-CYTOSKELETON COMPLEXES	UNIVERSITY OF PENNSYLVANIA	PHILADELPHIA	82 PENNSYLVANIA	06-83	2	82,867	CTY	114,822
1	R01 GM31003-01 22250	TELZER, BRUCE R CELL DIVISION: ANALYSIS OF THE MITOTIC APPARATUS	POMONA COLLEGE	CLAREMONT	82 CALIFORNIA	06-83	2	62,755	CBY	81,633
1	R01 GM31005-01 22250	ZIEVE, GARY W MITOSIS SPECIFIC CHANGES IN THE MAMMALIAN CYTOSKELETON	STATE UNIVERSITY NEW YORK	STONY BROOK STONY BROOK	82 NEW YORK	08-83	2	64,751	CBY	89,563
1	R01 GM31041-01 22250	SCHLIWA, MANFRED INTRACELLULAR ORGANELLE TRANSPORT	UNIVERSITY OF CALIFORNIA BERKELEY	BERKELEY	82 CALIFORNIA	06-83	2	72,228	CBY	90,760
1	R01 GM31198-01 HD 22250	KUBAI, DONNA F EVOLUTION OF CHROMOSOME MOVEMENT	DUKE UNIVERSITY	DURHAM	82 NORTH CAROLINA	07-83	4	42,313	CBY	55,970
1	R01 GM31229-01 22250	PENNINGROTH, STEPHEN M ATP-DEPENDENT CONTROL MECHANISMS IN FLAGELLAR MOTILITY	RUTGERS MEDICAL SCHOOL	PISCATAWAY	82 NEW JERSEY	06-83	2	36,819	MBY	58,446
7	R01 GM31617-01 22250	INOUE, SHINYA MITOSIS AND RELATED MOTILITY DIRECTLY IN LIVING CELLS	MARINE BIOLOGICAL LABORATORY	WOODS HOLE	82 MASSACHUSETTS	03-83	3	209,114	CBY	227,226

**	0	**CENTERS (P50)	0	0
**	0	PROGRAM PROJECTS (P01)	0	0
**	93	REGULAR PROJECTS (R01)	6,243,029	9,030,629
**	0	ALL OTHERS (P30, P41, R13, R23, R25)	0	0
**	93	TOTALS	6,243,029	9,030,629

T GRANT NUMBER PROG-AREA	INVESTIGATOR PROJECT TITLE	GRANTEE INSTITUTION	CITY	FY STATE	END-DATE	FUT-YRS AVAILABLE	IRG SUB DOLLARS DIRECT	TOTAL
CELLULAR BASIS OF DISEASE SECTION								
MEMBRANE STRUCTURE AND FUNCTION								
5 R01 GM03545-27 22300	HUF, ERNST G METABOLISM AND ACTIVE ION TRANSPORT IN SKIN	VIRGINIA COMMONWEALTH UNIVERSITY	RICHMOND	82 VIRGINIA	06-83	0	10,968	PHY 16,792
5 R01 GM04842-27 22300	HESS, GEORGE P RELATIONSHIPS BETWEEN PROTEIN STRUCTURE AND FUNCTION	CORNELL UNIVERSITY ITHACA	ITHACA	82 NEW YORK	08-83	0	53,829	BIO 76,414
5 R01 GM05810-23 22300	ABRAMS, ADOLPH STRUCTURE AND FUNCTION OF BACTERIAL MEMBRANE ATPASE	UNIVERSITY OF COLORADO HLTH SCIENCES CTR	DENVER	82 COLORADO	04-83	0	61,635	BIO 76,736
5 P01 GM06965-23 22300	REVEL, JEAN-PAUL MOLECULAR BASIS OF SPECIFICITY IN CELLULAR MEMBRANES	CALIFORNIA INSTITUTE OF TECHNOLOGY	PASADENA	82 CALIFORNIA	02-83	1	385,588	SSS 563,336
3 P01 GM06965-23S1 22300	REVEL, JEAN P MOLECULAR BASIS OF SPECIFICITY IN CELLULAR MEMBRANES	CALIFORNIA INSTITUTE OF TECHNOLOGY	PASADENA	82 CALIFORNIA	02-83	1	97,190	SSS 142,305
5 R01 GM11024-19 22300	OXENDER, DALE L MEMBRANE TRANSPORT COMPONENTS IN BACTERIA	UNIVERSITY OF MICHIGAN AT ANN ARBOR	ANN ARBOR	82 MICHIGAN	07-83	2	73,547	SSS 115,624
5 R01 GM11494-18 22300	WILLIS, JOHN S ION TRANSPORT IN CELLS OF HIBERNATING MAMMALS	UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN	URBANA	82 ILLINOIS	11-82	0	63,722	PHY 90,740
2 R01 GM11632-20 22300	BRAND, LUDWIG FLUORESCENCE PROBES IN STUDIES OF PROTEINS AND MEMBRANES	JOHNS HOPKINS UNIVERSITY	BALTIMORE	82 MARYLAND	08-83	4	121,070	BBCA 171,380
5 R01 GM13972-17 22300	LIPMANN, FRITZ GLUCOSE AND PHOSPHATE METABOLISM IN NORMAL AND MALIGNANT	ROCKEFELLER UNIVERSITY	NEW YORK	82 NEW YORK	08-83	0	90,843	PC 142,624
2 R01 GM14595-16 22300	SCHIFF, JEROME A STUDIES OF THE CONTINUITY OF CELLULAR ORGANELLES	BRANDEIS UNIVERSITY	WALTHAM	82 MASSACHUSETTS	11-82	2	110,880	BBCA 154,033
2 R01 GM14628-17 22300	THOMPSON, THOMAS E A STUDY OF PHOSPHOLIPID BILAYER MEMBRANES	UNIVERSITY OF VIRGINIA CHARLOTTESVILLE	CHARLOTTESVILLE	82 VIRGINIA	04-83	4	76,260	BBCB 107,877
5 R01 GM14772-15 22300	DIAMOND, JARED M WATER TRANSPORT ACROSS EPITHELIAL MEMBRANES	UNIVERSITY OF CALIFORNIA LOS ANGELES	LOS ANGELES	82 CALIFORNIA	03-83	1	96,460	PHY 125,898
5 R01 GM14971-17 22300	TIEN, H TI BILAYER LIPID MEMBRANES IN AQUEOUS MEDIA	MICHIGAN STATE UNIVERSITY	EAST LANSING	82 MICHIGAN	08-83	1	90,780	BBCB 126,175
5 R01 GM15590-16 22300	KAPLAN, SAMUEL INDUCTION AND BIOGENESIS OF SUBCELLULAR ORGANELLES	UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN	URBANA	82 ILLINOIS	12-82	2	78,716	MBC 110,989
5 R01 GM15761-14 22300	SLAYMAN, CAROLYN W GENETIC STUDY OF ION TRANSPORT IN NEUROSPORA	YALE UNIVERSITY	NEW HAVEN	82 CONNECTICUT	03-83	1	71,391	GEN 112,798
5 R01 GM15837-15 22300	WRIGHT, ANDREW STRUCTURE AND FUNCTION OF THE CELL MEMBRANE	TUFTS UNIVERSITY	BOSTON	82 MASSACHUSETTS	04-83	3	76,675	MBC 121,530

TABLE-4 RESEARCH GRANTS ACTIVE AS OF 09-30-82 BY PROGRAM AREA AND GRANT NUMBER

T	GRANT NUMBER / PROG-AREA	INVESTIGATOR / PROJECT TITLE	GRANTEE INSTITUTION	CITY	FY / STATE	END-DATE	FUT-YRS AVAILABLE	DOLLARS DIRECT	IRG / SUB DOLLARS TOTAL
CELLULAR BASIS OF DISEASE SECTION									
MEMBRANE STRUCTURE AND FUNCTION									
5	R01 GM15858-15 22300	SLAYMAN, CLIFFORD L, JR KINETICS AND REGULATION OF H+ TRANSPORT IN NEUROSPORA	YALE UNIVERSITY	NEW HAVEN	82 CONNECTICUT	04-83	3	104,722	PHY 165,461
5	R01 GM15924-15 22300	STRITTMATTER, PHILIPP STUDY OF STRUCTURE AND FUNCTION OF MICROSOMAL MEMBRANES	UNIVERSITY OF CONNECTICUT	HEALTH CENTER FARMINGTON	82 CONNECTICUT	05-83	0	138,000	PC 198,975
5	R01 GM15971-15 22300	SINGER, S JONATHAN MOLECULAR APPROACHES TO CELL ULTRASTRUCTURE	UNIVERSITY OF CALIFORNIA	SAN DIEGO LA JOLLA	82 CALIFORNIA	04-83	3	138,969	CTY 181,119
2	R01 GM17452-11 22300	HUANG, CHING-HSIEN PHOSPHOLIPID VESICLES--MODEL FOR BIOLOGICAL MEMBRANES	UNIVERSITY OF VIRGINIA	CHARLOTTESVILLE CHARLOTTESVILLE	82 VIRGINIA	04-83	4	76,044	BBCB 99,644
5	R01 GM17724-12 22300	WIDNELL, CHRISTOPHER C PLASMA MEMBRANE STRUCTURE, FUNCTION, AND BIOGENESIS	UNIVERSITY OF PITTSBURGH	PITTSBURGH	82 PENNSYLVANIA	06-83	3	92,576	MBY 139,416
5	R01 GM18006-11 22300	SCHNAITMAN, CARL A CELL SURFACE MEMBRANE PROTEINS	UNIVERSITY OF VIRGINIA	CHARLOTTESVILLE CHARLOTTESVILLE	82 VIRGINIA	03-83	2	54,478	MBY 78,588
5	R01 GM18305-11 22300	WEBSTER, ROBERT E BIOSYNTHESIS OF A MEMBRANE PROTEIN	DUKE UNIVERSITY	DURHAM	82 NORTH CAROLINA	12-82	0	65,544	MBC 97,816
5	R01 GM18405-11 22300	GLASER, LUIS REGULATION AND MECHANISM OF CELL SURFACE SYNTHESIS	WASHINGTON UNIVERSITY	SAINT LOUIS	82 MISSOURI	04-83	1	102,853	PBC 158,872
5	R01 GM18457-12 22300	CRAMER, WILLIAM A THE MECHANISM OF ACTION OF COLICIN	PURDUE UNIVERSITY WEST LAFAYETTE	WEST LAFAYETTE	82 INDIANA	08-83	1	61,866	BBCB 86,012
5	R01 GM18539-12 22300	SIMONI, ROBERT D MEMBRANE FUNCTION AND CELLULAR ENERGETICS	STANFORD UNIVERSITY	STANFORD	82 CALIFORNIA	07-83	1	80,759	MBC 126,439
5	R01 GM18819-09 22300	MACEY, ROBERT I CALCIUM & MAGNESIUM IN MEMBRANE TRANSPORT MAINTENANCE	UNIVERSITY OF CALIFORNIA	BERKELEY BERKELEY	82 CALIFORNIA	11-82	2	54,400	PHY 71,264
5	R01 GM18858-10 22300	GETZ, GODFREY S LIPIDS AND CONTROL OF MITOCHONDRIAL BIOGENESIS	UNIVERSITY OF CHICAGO	CHICAGO	82 ILLINOIS	12-82	1	85,346	MBY 130,737
5	R01 GM18974-11 22300	GOODENOUGH, DANIEL A MOLECULAR BIOLOGY OF INTERCELLULAR COMMUNICATIONS	HARVARD UNIVERSITY	BOSTON	82 MASSACHUSETTS	12-82	0	45,997	BBCA 90,062
5	R01 GM19035-11 22300	PRESTEGARD, JAMES H NMR INVESTIGATIONS OF VESICULAR MEMBRANES	YALE UNIVERSITY	NEW HAVEN	82 CONNECTICUT	12-82	3	63,686	SSS 98,884
5	R01 GM19043-11 22300	INOUYE, MASAYORI CELL DIVISION AND MEMBRANE PROTEINS	STATE UNIVERSITY NEW YORK	STONY BROOK STONY BROOK	82 NEW YORK	12-82	2	101,572	MBC 151,485
2	R01 GM19078-10A1 22300	KADNER, ROBERT J GENE AMPLIFICATION AND MEMBRANE PROTEINS	UNIVERSITY OF VIRGINIA	CHARLOTTESVILLE CHARLOTTESVILLE	82 VIRGINIA	08-83	2	57,513	SSS 81,639

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CELLULAR BASIS OF DISEASE SECTION MEMBRANE STRUCTURE AND FUNCTION									
5	R01 GM19394-09 22300	KIRTLEY, MARY E STUDY OF GLYCOLYTIC ENZYMES BOUND TO MEMBRANES	UNIVERSITY OF MARYLAND AT BALTIMORE	BALTIMORE	MARYLAND	81	11-82	0 51,471	BIO 85,957
5	R01 GM19483-12 22300	FAN, DAVID P CELL GROWTH AND DIVISION	UNIVERSITY OF MINNESOTA OF MNPLS-ST PAUL	MINNEAPOLIS	MINNESOTA	81	12-82	0 72,260	MBC 101,937
5	R01 GM19629-11 22300	HENRY, SUSAN A GENETICS AND DEVELOPMENT OF YEAST MEMBRANE MUTANTS	YESHIVA UNIVERSITY	NEW YORK	NEW YORK	82	08-83	3 127,620	GEN 232,213
5	R01 GM19807-10 22300	LATIES, GEORGE G MEMBRANE PERMEABILITY AS A REGULATORY ELEMENT	UNIVERSITY OF CALIFORNIA LOS ANGELES	LOS ANGELES	CALIFORNIA	81	11-82	0 60,785	BIO 79,318
5	R01 GM19998-09 22300	WILLIAMS, JOHN A ROLE OF CELL MEMBRANE IN HORMONE SECRETION AND ACTION	UNIVERSITY OF CALIFORNIA SAN FRANCISCO	SAN FRANCISCO	CALIFORNIA	82	12-82	1 92,400	CP 120,734
2	R01 GM20015-09 22300	BELL, ROBERT M REGULATION OF MEMBRANE PHOSPHOLIPID SYNTHESIS	DUKE UNIVERSITY	DURHAM	NORTH CAROLINA	82	04-83	4 93,824	MBC 136,586
5	R01 GM20113-09 22300	PERACCHIA, CAMILLO STRUCTURE & FUNCTION IN LOW RESISTANCE JUNCTIONS	UNIVERSITY OF ROCHESTER	ROCHESTER	NEW YORK	82	02-83	0 71,657	MBY 116,934
2	R01 GM20277-10 22300	SABATINI, DAVID D ATTACHMENT OF RIBOSOMES TO MICROSOMAL MEMBRANES	NEW YORK UNIVERSITY	NEW YORK	NEW YORK	82	12-82	4 189,377	MBY 266,509
5	R01 GM20396-10 22300	BRANTON, DANIEL ORGANIZATION OF NORMAL AND TRANSFORMED CELL MEMBRANES	HARVARD UNIVERSITY	CAMBRIDGE	MASSACHUSETTS	82	05-83	0 80,724	CTY 122,965
2	R01 GM20478-10 22300	DOWHAN, WILLIAM STRUCTURE AND FUNCTION OF MEMBRANE PROTEINS	UNIVERSITY OF TEXAS HLTH SCI CTR HOUSTON	HOUSTON	TEXAS	82	06-83	4 73,200	BIO 1 97,216
5	R01 GM20552-06 22300	KUN, ERNEST ENZYMOLOGY OF GLUTATHIONE-CARBOXYLIC ACID THIOESTERS	UNIVERSITY OF CALIFORNIA SAN FRANCISCO	SAN FRANCISCO	CALIFORNIA	81	11-82	0 48,676	BIO 63,766
2	R01 GM20737-09 22300	OXENDER, DALE L TRANSPORT COMPONENTS FROM EUKARYOTES	UNIVERSITY OF MICHIGAN AT ANN ARBOR	ANN ARBOR	MICHIGAN	82	03-83	4 94,430	CP 145,893
5	R01 GM20910-06 22300	KANESHIRO, EDNA S MEMBRANE ALTERATIONS IN BEHAVIORAL MUTANTS	UNIVERSITY OF CINCINNATI	CINCINNATI	OHIO	81	11-82	0 53,157	CBY 72,407
3	R01 GM20910-0651 22300	KANESHIRO, EDNA S MEMBRANE ALTERATIONS IN BEHAVIORAL MUTANTS	UNIVERSITY OF CINCINNATI	CINCINNATI	OHIO	81	11-82	0 28,600	CBY 28,600
5	R01 GM21006-06 22300	PIERUCCI, OLGA ROLE OF THE BACTERIAL ENVELOPE IN CELL DUPLICATION	ROSWELL PARK MEMORIAL INSTITUTE	BUFFALO	NEW YORK	81	03-83	0 29,686	MBC 38,739
2	R01 GM21128-08 22300	NAGLE, JOHN F THERMODYNAMIC MEASUREMENTS ON MEMBRANES	CARNEGIE-MELLON UNIVERSITY	PITTSBURGH	PENNSYLVANIA	82	11-82	2 50,150	BBCB 68,567

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CELLULAR BASIS OF DISEASE SECTION											
MEMBRANE STRUCTURE AND FUNCTION											
5	R01 GM21342-09 / 22300	ANDERSEN, OLAF S / CHANNEL-MEDIATED ION TRANSPORT ACROSS LIPID BILAYERS	CORNELL UNIVERSITY MEDICAL CENTER	NEW YORK	NEW YORK	82	05-83	3	84,072	PHY	124,427
5	R01 GM21615-07 / 22300	MAUL, GERD G / QUANTITATIVE STUDY OF NUCLEAR & ANNULATE LAMELLAE PORES	WISTAR INSTITUTE OF ANATOMY AND BIOLOGY	PHILADELPHIA	PENNSYLVANIA	82	11-82	0	63,829	CTY	108,927
5	P50 GM21714-08 / 22300	PALADE, GEORGE E / RESEARCH CENTER ON CELLULAR MEMBRANES	YALE UNIVERSITY	NEW HAVEN	CONNECTICUT	82	11-82	2	380,800	SSS	597,050
2	R01 GM21875-07 / 22300	BROCKERHOFF, HANS / ROLE OF CHOLESTEROL IN BIOLOGICAL MEMBRANES	INSTITUTE FOR BASIC RES IN DEV DISABIL	NEW YORK	NEW YORK	82	08-83	4	68,027	BBCB	105,475
5	R01 GM21909-06 / 22300	HULETT, F MARION / MEMBRANE PROTEIN-PROTEIN SECRETION STUDIES	UNIVERSITY OF ILLINOIS CHICAGO CIRCLE	CHICAGO	ILLINOIS	81	03-83	0	41,042	BIO	71,824
5	R01 GM21953-08 / 22300	GLASER, MICHAEL / LIPID METABOLISM AND MEMBRANE STRUCTURE AND FUNCTION	UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN	URBANA	ILLINOIS	82	12-82	3	79,459	CTY	112,598
2	R01 GM21971-08 / 22300	KREIBICH, GERT / ORGANIZATION AND BIOSYNTHESIS OF ER MEMBRANE PROTEINS	NEW YORK UNIVERSITY	NEW YORK	NEW YORK	82	01-83	4	113,935	MBY	164,447
5	R01 GM22057-08 / 22300	KENNEDY, EUGENE P / BIOGENESIS AND FUNCTION OF MEMBRANES	HARVARD UNIVERSITY	BOSTON	MASSACHUSETTS	82	04-83	2	83,821	MBC	161,803
5	R01 GM22086-08 / 22300	NAIDER, FRED R / PEPTIDE-CELL INTERACTIONS IN SACCHAROMYCES CEREVISIAE	COLLEGE OF STATEN ISLD ST. GEORGE CAMPUS	NEW YORK	NEW YORK	82	04-83	1	46,516	PB	72,882
5	R01 GM22087-08 / 22300	BECKER, JEFFREY M / PEPTIDE-CELL INTERACTIONS IN SACCHAROMYCES CEREVISIAE	UNIVERSITY OF TENNESSEE KNOXVILLE	KNOXVILLE	TENNESSEE	82	04-83	1	48,943	PB	70,607
5	R01 GM22175-07 / 22300	DAWIDOWICZ, ELIEZAR A / PHYSICAL STUDY OF LIPID MOTION IN RED CELL MEMBRANES	HARVARD UNIVERSITY	BOSTON	MASSACHUSETTS	82	03-83	1	65,794	BBCB	123,825
2	R01 GM22240-07 / 22300	WISNIESKI, BERNADINE J / PHYSICAL STRUCTURE OF ANIMAL CELL MEMBRANES	UNIVERSITY OF CALIFORNIA LOS ANGELES	LOS ANGELES	CALIFORNIA	82	11-82	4	82,635	BBCB	102,108
5	R01 GM22247-06 / 22300	BERNS, DONALD S / PHOTOSENSITIVE MODEL MEMBRANE STUDIES	NEW YORK STATE DEPARTMENT OF HEALTH	ALBANY	NEW YORK	80	10-82	0	36,533	BBCB	57,255
5	R01 GM22323-08 / 22300	EPSTEIN, WOLFGANG / BIOCHEMICAL STUDIES OF ATP-DRIVEN BACTERIAL TRANSPORT	UNIVERSITY OF CHICAGO	CHICAGO	ILLINOIS	82	08-83	2	67,017	MBC	111,189
5	R01 GM22328-07 / 22300	TOBACK, FREDERICK G / MEMBRANES AND PHOSPHOLIPIDS IN RENAL HYPERPLASIA	UNIVERSITY OF CHICAGO	CHICAGO	ILLINOIS	81	03-83	0	96,540	PTHA	153,294
3	R01 GM22328-07S1 / 22300	TOBACK, FREDERICK G / MEMBRANES AND PHOSPHOLIPIDS IN RENAL HYPERPLASIA	UNIVERSITY OF CHICAGO	CHICAGO	ILLINOIS	82	03-83	0	55,035	PTHA	93,009

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CELLULAR BASIS OF DISEASE SECTION MEMBRANE STRUCTURE AND FUNCTION									
5 R01 GM22432-08 22300	CHAN, SUNNEY I STUDIES OF LIPID-LIPID AND LIPID-PROTEIN INTERACTIONS	CALIFORNIA INSTITUTE OF TECHNOLOGY	PASADENA	CALIFORNIA	82	08-83	2	144,121	BBCB 211,379
5 R01 GM22714-08 22300	KUNG, CHING GENETIC AND BIOCHEMICAL STUDIES OF PARAMECIUM BEHAVIOR	UNIVERSITY OF WISCONSIN MADISON	MADISON	WISCONSIN	82	04-83	2	146,338	GEN 204,324
5 R01 GM22759-05 22300	BOLENDER, ROBERT P ANALYTICAL MORPHOLOGY AND BIOCHEMISTRY OF HEPATOCYTES	UNIVERSITY OF WASHINGTON	SEATTLE	WASHINGTON	82	04-83	3	48,221	CTY 64,568
5 R01 GM22900-07 22300	CHEN, HARRY W CHOLESTEROL IN MEMBRANE FUNCTION AND CELL TRANSFORMATION	JACKSON LABORATORY	BAR HARBOR	MAINE	82	03-83	1	81,135	MBY 130,968
5 R01 GM22912-06 22300	STAEHELIN, L ANDREW ADHESIVE INTERACTIONS BETWEEN MEMBRANES	UNIVERSITY OF COLORADO AT BOULDER	BOULDER	COLORADO	82	06-83	2	53,826	CTY 74,584
5 R01 GM22942-07 22300	PAGANO, RICHARD E CELL SURFACE LIPIDS: ORGANIZATION; DYNAMICS; METABOLISM	CARNEGIE INSTITUTION OF WASHINGTON D C	BALTIMORE	MARYLAND	82	02-83	1	62,966	MBY 105,471
5 R01 GM22961-06 22300	KNOWLES, JEREMY R TRANSPORT ACROSS BIOLOGICAL MEMBRANES	HARVARD UNIVERSITY	CAMBRIDGE	MASSACHUSETTS	82	11-82	3	53,175	MBC 81,890
5 R01 GM22996-07 22300	LIENHARD, GUSTAV E THE GLUCOSE TRANSPORT SYSTEM OF THE HUMAN ERYTHROCYTE	DARTMOUTH COLLEGE	HANOVER	NEW HAMPSHIRE	82	08-83	1	60,187	PBC 89,378
5 R01 GM23100-06 22300	HAKOMORI, SEN-ITIROH ANTI-CARBOHYDRATE ANTIBODIES IN CELL BIOLOGY	FRED HUTCHINSON CANCER RESEARCH CENTER	SEATTLE	WASHINGTON	82	02-83	3	67,456	CP 75,687
5 R01 GM23189-06 22300	VILLAREJO, MERNA R ISOLATION AND CHARACTERIZATION OF THE LAC PERMEASE	UNIVERSITY OF CALIFORNIA DAVIS	DAVIS	CALIFORNIA	81	10-82	0	40,861	PBC 53,528
2 R01 GM23244-07 22300	HORWITZ, ALAN F DETERMINANTS OF MYOGENIC MEMBRANE PHENOMENA	UNIVERSITY OF PENNSYLVANIA	PHILADELPHIA	PENNSYLVANIA	82	06-83	4	118,033	CP 175,787
5 R01 GM23250-06 22300	HUEBNER, JAY S PHOTO-ELECTRIC MEMBRANE PROBES: PHYSICAL STUDIES	UNIVERSITY OF NORTH FLORIDA	JACKSONVILLE	FLORIDA	82	06-83	0	25,427	BBCB 37,465
2 R01 GM23316-06 22300	HERZFELD, JUDITH NMR STUDIES OF BIOLOGICAL MEMBRANES	HARVARD UNIVERSITY	BOSTON	MASSACHUSETTS	82	03-83	3	50,370	BBCB 98,624
5 R01 GM23377-07 22300	WICKNER, WILLIAM T THE ASSEMBLY OF PROTEINS INTO BIOLOGICAL MEMBRANES	UNIVERSITY OF CALIFORNIA LOS ANGELES	LOS ANGELES	CALIFORNIA	82	06-83	1	86,551	MBC 119,659
5 R01 GM23573-05 22300	THOMPSON, THOMAS E THE PROPERTIES OF BILAYERS CONTAINING GLYCOSPHINGOLIPIDS	UNIVERSITY OF VIRGINIA CHARLOTTESVILLE	CHARLOTTESVILLE	VIRGINIA	82	12-82	1	39,836	SSS 56.862
2 R01 GM23585-06 22300	KOPPEL, DENNIS E MEMBRANE DYNAMICS OF LOCOMOTING TISSUE CELLS	UNIVERSITY OF CONNECTICUT HEALTH CENTER	FARMINGTON	CONNECTICUT	82	12-82	2	67,419	CTY 85,167

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CELLULAR BASIS OF DISEASE SECTION										
MEMBRANE STRUCTURE AND FUNCTION										
5	R01 GM23586-06 22300	JI, TAE H CROSSLINKING OF HORMONES TO RECEPTORS	UNIVERSITY OF WYOMING	LARAMIE	82 WYOMING	12-82	1	MBY	45,811	63,677
5	R01 GM23731-06 22300	PIERCE, SIDNEY K CELLULAR WATER BALANCE: THE INVERTEBRATE MECHANISM	UNIVERSITY OF MARYLAND COLLEGE PK CAMPUS	COLLEGE PARK	82 MARYLAND	03-83	0	PHY	47,331	67,210
5	R01 GM23858-05 22300	HOLLOWAY, PETER W THE DYNAMIC STATE OF CYTOCHROME B5 IN MEMBRANES	UNIVERSITY OF VIRGINIA CHARLOTTESVILLE	CHARLOTTESVILLE	82 VIRGINIA	12-82	3	PB	66,200	94,730
5	R01 GM23944-03 22300	ALBERTE, RANDALL S CONTROL OF ORGANELLE MEMBRANE BIOGENESIS	UNIVERSITY OF CHICAGO	CHICAGO	81 ILLINOIS	03-83	0	CTY	37,532	60,398
5	R01 GM23990-05 22300	HAYNES, DUNCAN H SARCOPLASMIC RETICULUM: CA2+ TRANSPORT AND RELEASE	UNIVERSITY OF MIAMI	MIAMI	82 FLORIDA	08-83	3	PB	68,190	113,195
5	R01 GM24035-06 22300	HELMKAMP, GEORGE M, JR MEMBRANE-PHOSPHOLIPID EXCHANGE PROTEIN INTERACTIONS	UNIVERSITY OF KANSAS COL HLTH SCI & HOSP	KANSAS CITY	82 KANSAS	06-83	0	PC	53,278	71,073
5	R01 GM24068-05 22300	PETHICA, BRIAN A THE EFFECTS OF APPLIED ELECTRIC FIELDS ON SURFACE FILMS	CLARKSON COLLEGE OF TECHNOLOGY	POTSDAM	82 NEW YORK	03-83	0	BBCB	3,750	5,756
5	R01 GM24147-05 22300	DOYLE, DARRELL J MEMBRANE BIOGENESIS IN NORMAL AND MALIGNANT CELLS	ROSWELL PARK MEMORIAL INSTITUTE	BUFFALO	82 NEW YORK	12-82	1	CTY	100,538	143,081
5	R01 GM24168-06 22300	KUTCHAI, HOWARD C RED CELLS AND CHICK HEART: TRANSPORT AND FLUIDITY	UNIVERSITY OF VIRGINIA CHARLOTTESVILLE	CHARLOTTESVILLE	82 VIRGINIA	07-83	0	PHY	45,728	66,294
5	R01 GM24267-06 22300	DAVIS, DONALD G THE CONFORMATION AND FUNCTION OF CYCLIC PEPTIDES	ADELPHI UNIVERSITY	GARDEN CITY	82 NEW YORK	06-83	0	BBCB	29,169	42,558
5	R01 GM24273-03 22300	MEHLHORN, ROLF J ASYMMETRY OF THE INNER MITOCHONDRIAL MEMBRANE	UNIVERSITY OF CALIFORNIA BERKELEY	BERKELEY	81 CALIFORNIA	12-82	0	BBCB	48,264	67,328
5	R01 GM24383-04 22300	COOPER, TERRANCE G SYNTHESIS AND ASSEMBLY OF EUCARYOTIC MEMBRANES	UNIVERSITY OF PITTSBURGH	PITTSBURGH	82 PENNSYLVANIA	12-82	1	BIO	53,427	80,429
5	R01 GM24459-05 22300	SCHNEIDER, DONALD L ENZYMES LINKING BIOENERGY TO CATABOLISM IN LYSOSOMES	DARTMOUTH COLLEGE	HANOVER	82 NEW HAMPSHIRE	06-83	0	BIO	29,628	43,998
5	R01 GM24507-04 22300	JACQUEZ, JOHN A IDENTIFICATION OF TRANSPORT ASSOCIATED PROTEINS	UNIVERSITY OF MICHIGAN AT ANN ARBOR	ANN ARBOR	81 MICHIGAN	12-82	0	PHY	33,857	53,494
5	R01 GM24590-05 22300	HO, JOHN T PHOSPHOLID PHASE TRANSITIONS AND MEMBRANE FUSION	STATE UNIVERSITY OF NEW YORK AT BUFFALO	BUFFALO	82 NEW YORK	12-82	0	BBCB	40,612	54,169
5	R01 GM24704-05 22300	SCHAFER, DAVID E PHYSICAL STUDIES OF ENTEROTOXIN-MEMBRANE INTERACTIONS	YALE UNIVERSITY	NEW HAVEN	82 CONNECTICUT	03-83	1	SSS	43,962	68,300

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	CELLULAR BASIS OF DISEASE SECTION MEMBRANE STRUCTURE AND FUNCTION								
2	R01 GM24749-13 22300	EISENMAN, GEORGE ION PERMEATION IN CHANNELS, CARRIERS AND NERVES	UNIVERSITY OF CALIFORNIA LOS ANGELES	LOS ANGELES	82 CALIFORNIA	06-83	4	58,888	PHY 78,096
5	R01 GM24792-05 22300	DAHLQUIST, FREDERICK W ENERGETICS AND DYNAMICS OF LIPID PROTEIN INTERACTIONS	UNIVERSITY OF OREGON	EUGENE	82 OREGON	12-82	3	66,462	BBCB 87,749
5	R01 GM24795-05 22300	ROBINSON, NEAL C HYDROPHOBIC ASSOCIATIONS OF MEMBRANE COMPLEXES	UNIVERSITY OF TEXAS HLTH SCI CTR SAN ANT	SAN ANTONIO	82 TEXAS	12-82	3	54,283	PB 73,441
5	R01 GM24840-05 22300	OHKI, SHINPEI CELL FUSION IN MODEL AND BIOLOGICAL MEMBRANE SYSTEMS	STATE UNIVERSITY OF NEW YORK AT BUFFALO	BUFFALO	82 NEW YORK	03-83	1	50,383	BBCB 73,286
5	R01 GM24951-08 22300	KEANA, JOHN F NEW LABELS FOR STUDYING MEMBRANE PROTEINS	UNIVERSITY OF OREGON	EUGENE	82 OREGON	05-83	1	71,331	BBCB 95,865
5	R01 GM24971-05 22300	MC LAUGHLIN, STUART G DIVALENT CATIONS AND MEMBRANES	STATE UNIVERSITY NEW YORK STONY BROOK	STONY BROOK	82 NEW YORK	08-83	1	87,327	BBCB 119,074
5	R01 GM25002-05 22300	ZADUNAISKY, JOSE A CHLORIDE TRANSPORT AND OSMOREGULATION	NEW YORK UNIVERSITY	NEW YORK	82 NEW YORK	03-83	0	53,891	PHY 80,567
2	R01 GM25030-04 22300	WILSON, DAVID B ISOLATION AND CHARACTERIZATION OF THE S GENE PRODUCT	CORNELL UNIVERSITY ITHACA	ITHACA	82 NEW YORK	06-83	2	64,549	MBC 93,873
5	R01 GM25047-05 22300	DOWHAN, WILLIAM MEMBRANE PROTEIN BIOSYNTHESIS & ASSEMBLY	UNIVERSITY OF TEXAS HLTH SCI CTR HOUSTON	HOUSTON	82 TEXAS	03-83	1	59,344	MBC 81,515
5	R01 GM25114-05 22300	CHUA, NAM-HAI TRANSFER OF PROTEINS INTO ORGANELLES	ROCKEFELLER UNIVERSITY	NEW YORK	82 NEW YORK	03-83	0	104,801	MBY 160,108
5	R01 GM25125-03 22300	OJAKIAN, GEORGE K FREEZE-ETCH STUDIES OF DEVELOPING TIGHT JUNCTIONS	DOWNSTATE MEDICAL CENTER	NEW YORK	80 NEW YORK	03-83	0	33,017	CBY 47,421
3	R01 GM25125-03S1 22300	OJAKIAN, GEORGE K FREEZE-FRACTURE ELECTRON MICROSCOPY	DOWNSTATE MEDICAL CENTER	NEW YORK	80 NEW YORK	03-83	0	82,500	SSS 82,500
5	R01 GM25144-05 22300	HONG, FELIX T PHOTOBIOLOGICAL SYSTEMS AND MEMBRANE INTERFACES	WAYNE STATE UNIVERSITY	DETROIT	82 MICHIGAN	11-82	0	49,293	MBY 64,084
5	R01 GM25152-03 22300	HASCHEMEYER, RUDY H GAMMA-GLUTAMYL TRANSPEPTIDASE--MEMBRANE BOUND ENZYMES	CORNELL UNIVERSITY MEDICAL CENTER	NEW YORK	81 NEW YORK	11-82	0	48,962	BBCB 74,838
2	R01 GM25190-04 22300	LOEW, LESLIE M A CONCERTED SEARCH FOR ELECTROCHROMIC MEMBRANE PROBES	STATE UNIVERSITY NEW YORK BINGHAMTON	BINGHAMTON	82 NEW YORK	11-82	3	70,473	BBCA 95,005
5	R01 GM25256-06 22300	MUELLER, PAUL H RECONSTITUTION AND ANALYSIS OF MEMBRANE TRANSPORT	UNIVERSITY OF PENNSYLVANIA	PHILADELPHIA	82 PENNSYLVANIA	08-83	1	61,202	BBCB 100,008

TABLE-4 RESEARCH GRANTS ACTIVE AS OF 09-30-82 BY PROGRAM AREA AND GRANT NUMBER

T	GRANT NUMBER / PROG-AREA	INVESTIGATOR / PROJECT TITLE	GRANTEE INSTITUTION	CITY	FY / STATE	END-DATE	FUT-YRS AVAILABLE	DOLLARS DIRECT	IRG SUB DOLLARS TOTAL
	CELLULAR BASIS OF DISEASE SECTION MEMBRANE STRUCTURE AND FUNCTION								
5	R01 GM25277-05 22300	TOSTESON, DANIEL C ION TRANSPORT ACROSS LIPID BILAYER MEMBRANES	HARVARD UNIVERSITY	BOSTON	82 MASSACHUSETTS	06-83	2	72,438	PHY 140,876
5	R01 GM25527-05 22300	AGABIAN, NINA M REGULATION OF CELL SURFACE DEVELOPMENT IN CAULOBACTER	UNIVERSITY OF WASHINGTON	SEATTLE	82 WASHINGTON	06-83	3	75,299	MBC 99,711
2	R01 GM25648-04 22300	DOUGLAS, MICHAEL G ASSEMBLY OF THE YEAST MITOCHONDRIAL ATPASE COMPLEX	UNIVERSITY OF TEXAS HLTH SCI CTR SAN ANT	SAN ANTONIO	82 TEXAS	11-82	4	88,557	GEN 115,722
5	R01 GM25661-05 22300	SHELL, WILLIAM J CELL SURFACE RECOGNITION AND CELL INTERACTIONS	UNIVERSITY OF TEXAS HLTH SCI CTR DALLAS	DALLAS	82 TEXAS	06-83	2	55,432	CBY 74,897
5	R01 GM25662-05 22300	ROTHMAN, JAMES E BIOCHEMISTRY OF CLATHRIN-COATED VESICLES	STANFORD UNIVERSITY	STANFORD	82 CALIFORNIA	07-83	1	85,013	CBY 131,421
5	R01 GM25686-05 22300	TOSTESON, DANIEL C MEMBRANES IN HYPERTENSION AND OTHER SYNDROMES	HARVARD UNIVERSITY	BOSTON	82 MASSACHUSETTS	06-83	0	78,168	PHY 153,053
5	R01 GM25693-05 22300	MAUZERALL, DAVID CHARGE TRANSFER ACROSS INTERFACES OF BIOLOGICAL SYSTEMS	ROCKEFELLER UNIVERSITY	NEW YORK	82 NEW YORK	06-83	1	66,609	BBCA 104,576
5	R01 GM25698-16 22300	GRIFFITH, O HAYES SPIN LABELING AND MEMBRANE STRUCTURE	UNIVERSITY OF OREGON	EUGENE	82 OREGON	05-83	0	98,633	BBCA 133,944
5	R01 GM25728-04 22300	STADLER, JOAN K MUTANTS OF MEMBRANE FUNCTION IN MAMMALIAN CELLS	IOWA STATE UNIVERSITY OF SCIENCE & TECH	AMES	82 IOWA	11-82	1	50,450	MGN 62,304
2	R01 GM25862-04 22300	FREED, JACK H ELECTRON-SPIN RELAXATION IN MODEL MEMBRANES	CORNELL UNIVERSITY ITHACA	ITHACA	82 NEW YORK	11-82	3	94,600	BBCB 138,293
2	R01 GM25937-04 22300	DUNKER, A KEITH LASER RAMAN STUDIES OF LIPID/PROTEIN INTERACTIONS	WASHINGTON STATE UNIVERSITY	PULLMAN	82 WASHINGTON	03-83	3	46,526	BBCB 65,213
2	R01 GM25938-04A1 22300	LEVITT, DAVID G BEHAVIOR AND EXISTENCE OF CELL MEMBRANE PORES	UNIVERSITY OF MINNESOTA OF MNPLS-ST PAUL	MINNEAPOLIS	82 MINNESOTA	06-83	2	53,843	PHY 71,743
5	R01 GM25973-03 22300	GREENBERG, G ROBERT MEMBRANE PROTEINS IN DEOXYRIBONUCLEOTIDE SYNTHESIS	UNIVERSITY OF MICHIGAN AT ANN ARBOR	ANN ARBOR	81 MICHIGAN	11-82	0	56,084	PC 87,743
2	R01 GM26020-04 22300	CLARKE, STEVEN G CONTROL OF EUCARYOTIC MEMBRANE FUNCTION BY METHYLATION	UNIVERSITY OF CALIFORNIA LOS ANGELES	LOS ANGELES	82 CALIFORNIA	11-82	4	72,270	PC 91,234
2	R01 GM26199-04 22300	CANTLEY, LEWIS C STRUCTURE AND MECHANISM OF MEMBRANE TRANSPORT SYSTEMS	HARVARD UNIVERSITY	CAMBRIDGE	82 MASSACHUSETTS	03-83	4	49,027	PB 72,694
5	R01 GM26234-03 22300	TILLACK, THOMAS W GLYCOLIPID LOCALIZATION IN LIPOSOMES AND MEMBRANES	UNIVERSITY OF VIRGINIA CHARLOTTESVILLE	CHARLOTTESVILLE	82 VIRGINIA	11-82	0	43,500	CTY 63,075

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	CELLULAR BASIS OF DISEASE SECTION MEMBRANE STRUCTURE AND FUNCTION									
5	R01 GM26248-04 22300	NIEDERMAN, ROBERT A ASSEMBLY OF AN ENERGY TRANSDUCING MEMBRANE SYSTEM	RUTGERS THE STATE UNIV NEW BRUNSWICK	NEW BRUNSWICK	NEW JERSEY	82	03-83	1	MBC 58,500	92,430
5	R01 GM26287-03 22300	MOFFETT, DAVID F POTASSIUM TRANSPORT BY INSECT MIDGUT	WASHINGTON STATE UNIVERSITY	PULLMAN	WASHINGTON	81	09-82	0	PHY 29,637	42,974
5	R01 GM26349-03 22300	KLEIN, CLAUDETTE PROCESSING OF THE CHEMOTACTIC SIGNAL IN D DISCOIDEUM	ST. LOUIS UNIVERSITY	SAINT LOUIS	MISSOURI	81	12-82	0	MBY 42,952	62,710
5	R01 GM26351-04 22300	OZOLS, JURIS B STRUCTURE AND PROTEOLYSIS OF HEPATIC MEMBRANE PROTEINS	UNIVERSITY OF CONNECTICUT HEALTH CENTER	FARMINGTON	CONNECTICUT	82	06-83	1	BIO 85,703	124,269
5	R01 GM26369-05 22300	PAPAHADJOPOULOS, DEMETRIOS PHOSPHOLIPID-PROTEIN INTERACTIONS AND MEMBRANE FUNCTION	UNIVERSITY OF CALIFORNIA SAN FRANCISCO	SAN FRANCISCO	CALIFORNIA	82	08-83	1	BBCB 64,019	81,752
2	R01 GM26524-04 22300	CASTLE, JOHN D EXOCYTOSIS: IN VITRO STUDIES	YALE UNIVERSITY	NEW HAVEN	CONNECTICUT	82	03-83	4	CBY 61,092	94,437
2	R01 GM26536-03A1 22300	HUDSON, BRUCE S FLUORESCENCE STUDIES OF MOTION IN MEMBRANES	UNIVERSITY OF OREGON	EUGENE	OREGON	82	05-83	2	BBCB 42,140	55,436
5	R01 GM26554-05 22300	HEINZ, ERICH MECHANISM AND FUNCTION OF PROTON FLOWS IN ANIMAL CELLS	CORNELL UNIVERSITY MEDICAL CENTER	NEW YORK	NEW YORK	82	08-83	1	PHY 51,973	76,920
5	R01 GM26600-03 22300	FERGUSON, KAREN A EFFECT OF STEROL ON MEMBRANE-BOUND ENZYMES	STATE UNIVERSITY OF NEW YORK AT BUFFALO	BUFFALO	NEW YORK	81	06-83	0	PC 48,889	71,388
2	R01 GM26669-04 22300	RAYFIELD, GEORGE W MEMBRANE BIOPHYSICS	UNIVERSITY OF OREGON	EUGENE	OREGON	82	08-83	2	BBCA 59,889	69,674
2	R01 GM26713-04 22300	DOUGLAS, MICHAEL G POST TRANSLATIONAL MODIFICATION IN MEMBRANE BIOGENESIS	UNIVERSITY OF TEXAS HLTH SCI CTR SAN ANT	SAN ANTONIO	TEXAS	82	07-83	2	CTY 40,641	54,984
2	R01 GM26755-04 22300	SCHEKMAN, RANDY BIOLOGICAL STUDIES OF EUCARYOTIC CELL SURFACE GROWTH	UNIVERSITY OF CALIFORNIA BERKELEY	BERKELEY	CALIFORNIA	82	06-83	4	CP 101,600	139,980
2	R01 GM26763-04 22300	JACKSON, ROBERT C BIOSYNTHESIS AND SEGREGATION OF SECRETORY PROTEINS	DARTMOUTH COLLEGE	HANOVER	NEW HAMPSHIRE	82	08-83	2	CBY 64,000	92,596
2	R01 GM26861-04 22300	JENNINGS, MICHAEL L BIOCHEMICAL STUDIES OF ERYTHOCYTE ANION TRANSPORT	UNIVERSITY OF IOWA	IOWA CITY	IOWA	82	06-83	4	PB 78,215	99,083
2	R01 GM26874-04 22300	HO, CHIEN NMR AND BIOCHEMICAL STUDIES OF BIOLOGICAL MEMBRANES	CARNEGIE-MELLON UNIVERSITY	PITTSBURGH	PENNSYLVANIA	82	12-82	4	BBCB 125,050	178,975
5	R01 GM26894-04 22300	BILTONEN, RODNEY L A MODEL CALCIUM TRANSPORT SYSTEM	UNIVERSITY OF VIRGINIA CHARLOTTESVILLE	CHARLOTTESVILLE	VIRGINIA	82	06-83	1	BBCB 71,696	103,284

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	CELLULAR BASIS OF DISEASE SECTION MEMBRANE STRUCTURE AND FUNCTION								
	5 R01 GM26897-03 22300	SZABO, GABOR STRUCTURE-FUNCTION RELATIONSHIPS FOR GATABLE CHANNELS	UNIVERSITY OF TEXAS MED BR GALVESTON	GALVESTON	81 TEXAS	07-83	0	35,020	BBCB 46,587
	5 R01 GM26898-04 22300	URRY, DAN W CHANNEL MECHANISMS FOR PERMEATION OF BIOMEMBRANES	UNIVERSITY OF ALABAMA IN BIRMINGHAM	BIRMINGHAM	82 ALABAMA	06-83	1	80,619	BBCB 105,473
	5 R01 GM26976-03 22300	RUDY, BERNARDO ANALYSIS OF VOLTAGE-DEPENDENT CHANNELS IN VITRO	NEW YORK UNIVERSITY	NEW YORK	81 NEW YORK	03-83	0	47,863	BBCB 68,923
	5 R01 GM26980-03 22300	WALDBILLIG, RONALD C MEMBRANE SOLUBILITY OF ANESTHETICS IN BILAYER NERVE	UNIVERSITY OF TEXAS MED BR GALVESTON	GALVESTON	82 TEXAS	11-82	0	61,800	BBCB 83,080
	5 R01 GM27042-06 22300	CIANI, SERGIO SELECTIVE ION PERMEATION IN EXCITABLE CELLS	UNIVERSITY OF CALIFORNIA LOS ANGELES	LOS ANGELES	82 CALIFORNIA	11-82	0	54,000	PHY 70,120
	5 R01 GM27049-03 22300	FISHER, KNUTE A SPLIT MEMBRANE LIPIDS AND POLYPEPTIDES	UNIVERSITY OF CALIFORNIA SAN FRANCISCO	SAN FRANCISCO	82 CALIFORNIA	01-83	0	61,490	MBY 79,477
	5 P01 GM27057-03 22300	STOECKENIUS, WALTHER LIGHT-ENERGY AND SIGNAL-TRANSDUCTING MEMBRANES	UNIVERSITY OF CALIFORNIA SAN FRANCISCO	SAN FRANCISCO	82 CALIFORNIA	05-83	2	492,047	SSS 643,111
	5 R01 GM27087-03 22300	LEVITZKI, ALEXANDER THE ADENOSINE RECEPTOR AND ITS MODE OF COUPLING	HEBREW UNIVERSITY OF JERUSALEM	JERUSALEM	82 ISRAEL	03-83	0	46,728	BIO 46,728
	5 R01 GM27127-03 22300	WESTERMAN, PHILIP W DMR STUDIES OF PROTEIN-PHOSPHOLIPID BILAYER MEMBRANES	NORTHEASTERN OHIO UNIVERSITIES COLL MED	ROOTSTOWN	82 OHIO	12-82	0	46,600	BBCB 58,012
	5 R01 GM27140-02 22300	KOHLER, SUSAN J 31P AND 2H NMR INVESTIGATION OF PHOSPHOLIPID BILAYERS	MOUNT HOLYOKE COLLEGE	SOUTH HADLEY	81 MASSACHUSETTS	11-82	0	24,186	BBCB 35,335
	5 R01 GM27155-03 22300	BLOBEL, GUNTER K TRANSLOCATION OF PROTEINS ACROSS MEMBRANES	ROCKEFELLER UNIVERSITY	NEW YORK	82 NEW YORK	11-82	2	186,354	MBY 286,612
	5 R01 GM27160-03 22300	ELSON, ELLIOT L BIOPHYSICAL STUDIES OF CELL DEFORMABILITY	WASHINGTON UNIVERSITY	SAINT LOUIS	82 MISSOURI	11-82	1	75,960	MBY 117,174
	5 R01 GM27170-03 22300	ROESKE, ROGER W CHARACTERIZATION OF MEMBRANE-ACTIVE PEPTIDES	INDIANA UNIV-PURDUE UNIV AT INDIANAPOLIS	INDIANAPOLIS	82 INDIANA	11-82	0	65,890	BBCA 88,954
	5 R01 GM27171-03 22300	LANGDON, ROBERT G MECHANISM OF GLUCOSE TRANSPORT THROUGH BIOMEMBRANES	UNIVERSITY OF VIRGINIA CHARLOTTESVILLE	CHARLOTTESVILLE	82 VIRGINIA	07-83	0	62,477	PB 90,592
	5 R01 GM27243-03 22300	BROWN, ELLEN B RAMAN SPECTROSCOPIC STUDIES OF MEMBRANE COMPONENTS	WAYNE STATE UNIVERSITY	DETROIT	82 MICHIGAN	08-83	0	13,370	BBCB 18,175
	5 R01 GM27260-03 22300	BAUMANN, GILBERT EXPERIMENTAL TESTING OF THE MODULAR CHANNEL CONCEPT	DUKE UNIVERSITY	DURHAM	82 NORTH CAROLINA	06-83	0	32,600	PHY 48,900

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CELLULAR BASIS OF DISEASE SECTION										
MEMBRANE STRUCTURE AND FUNCTION										
5	R01 GM27283-02 22300	ALLEN, RICHARD D CELLULAR MEMBRANE RECYCLING	UNIVERSITY OF HAWAII AT MANOA	HONOLULU	81 HAWAII	02-83	0	CBY	19,379	25,697
5	R01 GM27292-03 22300	WALLACE, BONNIE A STRUCTURAL BASIS OF MEMBRANE PROTEIN FUNCTIONS	COLUMBIA UNIVERSITY	NEW YORK	82 NEW YORK	11-82	1	BBCA	38,989	64,129
5	R01 GM27298-03 22300	SATIR, BIRGIT H GENETICS OF EXOCYTOSIS IN MORTAL/IMMORTAL PROTOZOA	YESHIVA UNIVERSITY	NEW YORK	82 NEW YORK	01-83	0	CBY	60,000	110,740
5	R01 GM27303-03 22300	PALADE, GEORGE E MEMBRANE INTERACTIONS IN EUKARYOTIC CELLS	YALE UNIVERSITY	NEW HAVEN	82 CONNECTICUT	11-82	2	MBY	76,314	119,126
5	R01 GM27367-03 22300	COHEN, FREDRIC S FUSION OF PHOSPHOLIPID VESICLES WITH PLANAR MEMBRANES	RUSH UNIVERSITY	CHICAGO	82 ILLINOIS	03-83	0	BBCB	37,553	62,186
5	R01 GM27472-03 22300	HEDGPETH, JOE PROTEIN SECRETION STUDIES WITH PLASMID-CLONED GENES	UNIVERSITY OF CALIFORNIA SAN FRANCISCO	SAN FRANCISCO	82 CALIFORNIA	12-82	0	MBC	44,322	57,752
5	R01 GM27509-03 22300	GORDON, JULIUS A LECTINS, MEMBRANE BINDING AND BIOLOGIC REGULATION	UNIVERSITY OF COLORADO HLTH SCIENCES CTR	DENVER	82 COLORADO	08-83	0	CBY	33,260	42,240
5	R01 GM27592-03 22300	KELLY, DOUGLAS E FREEZE-FRACTURE OF DESMOSOMAL AND TRIADIC JUNCTIONS	UNIVERSITY OF SOUTHERN CALIFORNIA	LOS ANGELES	82 CALIFORNIA	08-83	0	MBY	48,901	74,819
5	R01 GM27612-07 22300	SONENBERG, MARTIN ION TRANSPORT IN HORMONAL RESPONSIVENESS	SLOAN-KETTERING INSTITUTE FOR CANCER RES	NEW YORK	81 NEW YORK	06-83	0	SSS	74,042	109,582
5	R01 GM27632-03 22300	BARKER, ROBERT MEMBRANE OLIGOSACCHARIDES AND MONOSACCHARIDE METABOLISM	CORNELL UNIVERSITY ITHACA	ITHACA	82 NEW YORK	01-83	2	PC	48,381	69,503
5	R01 GM27656-03 22300	MACDONALD, RUSSELL E COUPLING OF ENERGY TO THE TRANSPORT OF IONS & MOLECULES	CORNELL UNIVERSITY ITHACA	ITHACA	82 NEW YORK	08-83	0	BIO	68,197	100,080
5	R01 GM27690-03 22300	STRAUSS, HERBERT L VIBRATIONAL STUDIES OF LIPID STRUCTURE AND DYNAMICS	UNIVERSITY OF CALIFORNIA BERKELEY	BERKELEY	82 CALIFORNIA	03-83	0	BBCB	56,283	73,731
5	R01 GM27733-02 22300	DE HARVEN, ETIENNE GM1 IN MYOBLAST DIFFERENTIATION AND TRANSFORMATION	SLOAN-KETTERING INSTITUTE FOR CANCER RES	NEW YORK	82 NEW YORK	11-82	0	CBY	15,723	23,902
5	R01 GM27744-03 22300	BROWN, ELLEN B POLAR HEAD GROUP INTERACTIONS AND LIPID PROPERTIES	WAYNE STATE UNIVERSITY	DETROIT	82 MICHIGAN	04-83	0	BBCB	22,800	32,423
5	R01 GM27753-03 22300	CABANTCHIK, Z IOAV ANION TRANSPORT: MOLECULAR DISSECTION OF PROCESSES	HEBREW UNIVERSITY OF JERUSALEM	JERUSALEM	82 ISRAEL	04-83	0	BBCA	42,088	42,088
5	R01 GM27756-03 22300	EISENBERG, MOISES VOLTAGE GATED PORES IN MEMBRANES: ALAMETHICIN	STATE UNIVERSITY NEW YORK STONY BROOK	STONY BROOK	82 NEW YORK	03-83	0	BBCB	32,411	48,272

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	CELLULAR BASIS OF DISEASE SECTION							
		MEMBRANE STRUCTURE AND FUNCTION						
5	R01 GM27764-03 22300	UNWIN, PETER N STRUCTURE OF MOLECULAR ASSEMBLIES INVOLVING MEMBRANES	STANFORD UNIVERSITY	STANFORD	82 CALIFORNIA	03-83	85,683 2	MBY 134,219
1	R01 GM27804-01A2 22300	BEALL, HIE PING FAST TRANSPORT KINETICS & ULTRASTRUCTURE OF THE NA+ PUMP	DUKE UNIVERSITY	DURHAM	82 NORTH CAROLINA	04-83	68,116 2	PB 101,174
5	R01 GM27851-03 22300	ORR, GEORGE A SELECTIVE RETRIEVAL OF LABELED MEMBRANE COMPONENTS	YESHIVA UNIVERSITY	NEW YORK	82 NEW YORK	03-83	68,193 0	CBY 125,635
5	P01 GM27859-03 22300	SATIR, PETER MEMBRANE-CYTOSKELETAL RELATIONSHIPS	YESHIVA UNIVERSITY	NEW YORK	82 NEW YORK	04-83	182,948 0	SSS 336,293
5	R01 GM27906-03 22300	THOMAS, DAVID D BIOPHYSICAL STUDIES OF MEMBRANE MOLECULAR DYNAMICS	UNIVERSITY OF MINNESOTA OF MNPLS-ST PAUL	MINNEAPOLIS	82 MINNESOTA	03-83	40,931 0	BBCB 54,298
5	R01 GM27914-03 22300	COSTELLO, MARTIN J, III COMBINED X-RAY/EM ANALYSIS OF INTRAMEMBRANE PARTICLES	DUKE UNIVERSITY	DURHAM	82 NORTH CAROLINA	06-83	42,234 0	BBCB 62,824
5	R01 GM27919-03 22300	BRADLEY, TIMOTHY J CONTROL OF ION AND WATER TRANSPORT IN INSECT EPITHELIA	UNIVERSITY OF CALIFORNIA IRVINE	IRVINE	82 CALIFORNIA	03-83	46,963 0	CBY 61,212
5	R01 GM27920-03 22300	FORBUSH, BLISS, III SUBUNIT INTERACTIONS AND THE MECHANISM OF NA, K-ATPASE	YALE UNIVERSITY	NEW HAVEN	82 CONNECTICUT	03-83	56,923 0	BIO 89,938
5	R01 GM27989-03 22300	LODISH, HARVEY F STRUCTURE AND BIOSYNTHESIS OF AN HEPATIC RECEPTOR	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	CAMBRIDGE	82 MASSACHUSETTS	06-83	66,945 0	CP 96,712
5	P01 GM28002-03 22300	GLASER, LUIS MEMBRANE PROPERTIES, INTERACTIONS DURING DIFFERENTIATION	WASHINGTON UNIVERSITY	SAINT LOUIS	82 MISSOURI	07-83	80,558 0	SSS 124,865
5	R01 GM28035-03 22300	ROCK, CHARLES O REGULATION OF MEMBRANE PHOSPHOLIPID STRUCTURE	ST. JUDE CHILDREN'S RESEARCH HOSPITAL	MEMPHIS	82 TENNESSEE	06-83	48,740 0	MBC 66,790
5	R01 GM28036-03 22300	LUEKING, DONALD R THE REGULATION OF PROCARYOTIC PHOSPHOLIPID SYNTHESIS	TEXAS AGRI AND MECH UNIV COLLEGE STATION	COLLEGE STATION	82 TEXAS	07-83	30,618 0	MBC 39,497
5	R01 GM28040-03 22300	MARTIN, CHARLES E THE ROLE OF STEROLS IN MEMBRANE FUNCTION	RUTGERS THE STATE UNIV NEW BRUNSWICK	NEW BRUNSWICK	82 NEW JERSEY	08-83	37,404 0	CTY 57,999
5	R01 GM28070-09 22300	GAFFNEY, BETTY J SPIN LABELING RECEPTORS ON NORMAL AND MALIGNANT CELLS	JOHNS HOPKINS UNIVERSITY	BALTIMORE	82 MARYLAND	04-83	58,780 0	BBCA 88,170
5	R01 GM28117-03 22300	PAPAHADJOPOULOS, DEMETRIOS MECHANISM OF MEMBRANE FUSION	UNIVERSITY OF CALIFORNIA SAN FRANCISCO	SAN FRANCISCO	82 CALIFORNIA	07-83	50,064 1	BBCB 63,932
5	R01 GM28120-03 22300	HUI, SEK-WEN EFFECTS OF BILAYER DEFECTS ON MEMBRANE ACTIVITY	ROSWELL PARK MEMORIAL INSTITUTE	BUFFALO	82 NEW YORK	06-83	51,179 0	BBCB 75,621

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CELLULAR BASIS OF DISEASE SECTION									
MEMBRANE STRUCTURE AND FUNCTION									
5	R01 GM28140-03	CARMAN, GEORGE M	RUTGERS THE STATE UNIV	NEW BRUNSWICK	82	06-83	0		PC
	22300	PHOSPHATIDYLINOSITOL METABOLISM AND MEMBRANE FUNCTION		NEW BRUNSWICK	NEW JERSEY			32,096	50,712
5	R01 GM28149-02	NEURINGER, LEO J	MASSACHUSETTS INSTITUTE OF TECHNOLOGY		82	03-83	1		BBCB
	22300	NMR STUDIES OF NEURAL MEMBRANES AND MODEL SYSTEMS		CAMBRIDGE	MASSACHUSETTS			69,021	96,094
5	R01 GM28170-03	ORR, GEORGE A	YESHIVA UNIVERSITY		82	06-83	0		MBC
	22300	PHOSPHOLIPID ANALOGS AND MEMBRANE FUNCTION		NEW YORK	NEW YORK			58,738	109,253
5	R01 GM28188-03	STORRIE, BRIAN	VIRGINIA POLYTECHNIC INST AND ST UNIV		82	07-83	0		CBY
	22300	PROCESSING OF PINOCYTIC VESICLES IN FIBROBLASTS		BLACKSBURG	VIRGINIA			40,921	60,563
5	R01 GM28194-03	GREEN, MICHAEL	ST. LOUIS UNIVERSITY		82	08-83	0		MBY
	22300	NASCENT PROTEIN PROCESSING BY ENDOPLASMIC RETICULUM		SAINT LOUIS	MISSOURI			66,602	98,883
5	R01 GM28207-03	RAGHAVAN, SRINIVASA	EUNICE KENNEDY SHRIVER CTR MTL RETARDATN		82	07-83	0		CP
	22300	SPHINGOLIPID METABOLISM IN HUMAN SKIN FIBROBLASTS		WALTHAM	MASSACHUSETTS			63,615	95,677
5	R01 GM28224-03	ROBERTSON, J DAVID	DUKE UNIVERSITY		82	06-83	0		SSS
	22300	STRUCTURE OF PARA-CRYSTALLINE BIOLOGICAL MEMBRANES		DURHAM	NORTH CAROLINA			101,822	152,733
5	R01 GM28250-03	KOPPEL, DENNIS E	UNIVERSITY OF CONNECTICUT HEALTH CENTER		82	06-83	0		BBCA
	22300	GLYCOPROTEIN MOBILITIES-MATRIX CONTROLS		FARMINGTON	CONNECTICUT			40,010	56,665
5	R01 GM28289-02	KHORANA, HAR G	MASSACHUSETTS INSTITUTE OF TECHNOLOGY		82	11-82	3		BIO
	22300	SYNTHETIC AND BIOLOGICAL STUDIES OF NUCLEIC ACIDS		CAMBRIDGE	MASSACHUSETTS			385,224	582,970
5	R01 GM28338-03	MOUNTCASTLE, DONALD B	UNIVERSITY OF MAINE AT ORONO		82	06-83	0		BBCB
	22300	TRANSMEMBRANE SIGNALING FOLLOWING RECEPTOR BINDING		ORONO	MAINE			39,225	57,465
5	R01 GM28359-03	VILLEREAL, MITCHEL L	UNIVERSITY OF CHICAGO		82	03-83	0		MBY
	22300	MECHANISMS OF MEMBRANE FUNCTION IN CELL GROWTH		CHICAGO	ILLINOIS			58,025	91,099
5	R01 GM28404-06	MACDONALD, ROBERT C	NORTHWESTERN UNIVERSITY		82	02-83	0		BBCB
	22300	MEMBRANE FUSION		EVANSTON	ILLINOIS			29,893	41,252
1	R01 GM28438-01	NEUMAN, RONALD D	UNIVERSITY OF MINNESOTA OF MNPLS-ST PAUL		81	01-83	0		BBCB
	22300	LASER LIGHT-SCATTERING STUDIES OF LIPID MONOLAYERS		MINNEAPOLIS	MINNESOTA			8,855	12,454
5	R01 GM28450-02	COLOMBINI, MARCO	UNIVERSITY OF MARYLAND COLLEGE PK CAMPUS		82	12-82	1		PHY
	22300	PROBING THE MECHANISM OF A VOLTAGE DEPENDENT CHANNEL		COLLEGE PARK	MARYLAND			42,971	60,389
5	R01 GM28521-02	GERACE, LARRY R	JOHNS HOPKINS UNIVERSITY		82	11-82	1		CBY
	22300	STRUCTURE AND FUNCTIONS OF THE NUCLEAR ENVELOPE		BALTIMORE	MARYLAND			52,205	78,308
5	R01 GM28526-02	KEEN, JAMES H	TEMPLE UNIVERSITY		82	11-82	1		CP
	22300	CLATHRIN AND MEMBRANE FUNCTION		PHILADELPHIA	PENNSYLVANIA			54,040	80,561

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T	GRANT NUMBER / PROG-AREA	INVESTIGATOR / PROJECT TITLE	GRANTEE INSTITUTION	CITY	FY / STATE	END-DATE	FUT-YRS AVAILABLE DIRECT	IRG SUB DOLLARS TOTAL
	CELLULAR BASIS OF DISEASE SECTION MEMBRANE STRUCTURE AND FUNCTION							
5	R01 GM28532-02 22300	LAUTERBUR, PAUL C NMR AND ESR STUDIES OF OUTER MEMBRANE PROTEINS	STATE UNIVERSITY NEW YORK	STONY BROOK STONY BROOK	82 NEW YORK	01-83	33,385 1	BBCB 49,075
5	R01 GM28538-02 22300	CANTLEY, LEWIS C, JR MECHANISM OF CATION TRANSPORT REGULATION	HARVARD UNIVERSITY	CAMBRIDGE	82 MASSACHUSETTS	01-83	34,800 1	PB 53,052
1	R01 GM28559-01A1 22300	REDMAN, COLVIN M BIOGENESIS OF ERYTHROCTYE MEMBRANE PROTEINS	NEW YORK BLOOD CENTER	NEW YORK	82 NEW YORK	08-83	67,019 2	CTY 97,497
5	R01 GM28643-02 22300	JORDAN, PETER C ELECTROSTATIC MODELLING OF ION PORES	BRANDEIS UNIVERSITY	WALTHAM	82 MASSACHUSETTS	12-82	31,172 1	PHY 50,499
1	R01 GM28673-01A1 22300	FARLEY, ROBERT A THE STRUCTURE OF (NA-K) ATPASE	UNIVERSITY OF SOUTHERN CALIFORNIA	LOS ANGELES	82 CALIFORNIA	03-83	54,476 2	PB 71,547
5	R01 GM28704-02 22300	HACKENBROCK, CHARLES R STRUCTURAL AND FUNCTIONAL ENGINEERING OF A BIOMEMBRANE	UNIVERSITY OF NORTH CAROLINA	CHAPEL HILL CHAPEL HILL	82 NORTH CAROLINA	11-82	59,000 2	PB 82,364
5	R01 GM28757-03 22300	ARNETT, EDWARD M CHIRAL MONOLAYERS	DUKE UNIVERSITY	DURHAM	82 NORTH CAROLINA	06-83	58,957 0	BBCB 87,836
2	R01 GM28766-02A1 22300	BLOODGOOD, ROBERT A STUDIES ON MEMBRANE-ASSOCIATED MOTILITY	UNIVERSITY OF VIRGINIA	CHARLOTTESVILLE CHARLOTTESVILLE	82 VIRGINIA	06-83	70,665 2	CBY 97,897
5	R01 GM28767-03 22300	WEBER, HANS J ACTIVE SODIUM TRANSLOCATION IN HALOBACTERIUM HALOBIUM	UNIVERSITY OF CALIFORNIA	SAN FRANCISCO SAN FRANCISCO	82 CALIFORNIA	06-83	67,911 0	PB 86,722
5	R01 GM28795-08 22300	TSONG, TIAN Y DYNAMICS OF SYNTHETIC AND BIOLOGICAL MEMBRANE	JOHNS HOPKINS UNIVERSITY	BALTIMORE	82 MARYLAND	04-83	72,387 3	BBCB 107,081
5	R01 GM28810-02 22300	WU, HENRY C MAMMALIAN CELL SURFACE GENETICS AND BIOCHEMISTRY	U.S. UNIFORMED SERVICES	UNIV OF HLTH SCI BETHESDA	82 MARYLAND	11-82	69,732 0	GEN 69,732
5	R01 GM28811-03 22300	WU, HENRY C BIOCHEMISTRY OF CELL DIVISION IN BACTERIA	U.S. UNIFORMED SERVICES	UNIV OF HLTH SCI BETHESDA	82 MARYLAND	07-83	73,703 2	MBC 73,703
5	R01 GM28832-03 22300	PETERSON, SCOTT W ISOLATION OF THE ERYTHROCYTE MEMBRANE CA2+-ATPASE	BOSTON UNIVERSITY	BOSTON	82 MASSACHUSETTS	07-83	34,013 0	CBY 61,087
5	R01 GM28835-03 22300	PENNISTON, JOHN T PURIFICATION AND PROPERTIES OF CA2+ PUMPING ATPASE	MAYO FOUNDATION	ROCHESTER	82 MINNESOTA	07-83	68,278 2	PB 89,476
5	R01 GM28839-03 22300	FREEDMAN, JEFFREY C ELECTROPHYSIOLOGY OF HUMAN RED BLOOD CELLS	UPSTATE MEDICAL CENTER	SYRACUSE	82 NEW YORK	07-83	27,335 0	PHY 39,665
5	R01 GM28844-02 22300	GUTKNECHT, JOHN W ACID/BASE TRANSPORT THROUGH LIPID BILAYER MEMBRANES	DUKE UNIVERSITY	DURHAM	82 NORTH CAROLINA	03-83	31,500 1	PHY 47,250

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CELLULAR BASIS OF DISEASE SECTION								
MEMBRANE STRUCTURE AND FUNCTION								
5 R01 GM28887-03 22300	HENDERSON, ELLEN J PROTEIN TOPOGRAPHY OF D. DISCOIDEUM PLASMA MEMBRANES	GEORGETOWN UNIVERSITY	WASHINGTON	82 DIST OF COL	07-83	0	39,124	MBY 54,683
5 R01 GM28897-02 22300	TOSCANO, WILLIAM A, JR MECHANSISM OF CALCIUM STIMULATION OF ADENYLATE CYCLASE	HARVARD UNIVERSITY	BOSTON	82 MASSACHUSETTS	03-83	1	72,200	CTY 126,312
5 R01 GM28932-02 22300	GOODENOUGH, DANIEL A MOLECULAR BIOLOGY OF ZONULAE OCCLUDENTES	HARVARD UNIVERSITY	BOSTON	82 MASSACHUSETTS	03-83	1	58,753	CTY 113,250
5 R01 GM28992-02 22300	LATORRE, RAMON IONIC CHANNEL FORMATION MECHANISMS IN LIPID BILAYERS	HARVARD UNIVERSITY	BOSTON	82 MASSACHUSETTS	03-83	1	36,594	PHY 71,651
5 R01 GM29053-02 22300	ROCK, CHARLES O REGULATORY SITES IN MEMBRANE LIPID BIOSYNTHESIS	ST. JUDE CHILDREN'S RESEARCH HOSPITAL	MEMPHIS	82 TENNESSEE	03-83	1	64,894	MG 89,408
5 R01 GM29099-02 22300	KARNAKY, KARL J, JR A NEW MODEL SYSTEM TO STUDY CHLORIDE TRANSPORT	UNIVERSITY OF TEXAS HLTH SCI CTR HOUSTON	HOUSTON	82 TEXAS	12-82	1	42,621	PHY 58,817
5 R01 GM29127-02 22300	JACOBSON, BRUCE S PLASMA-MEMBRANE REGIONS AS CELLS GROW IN MONOLAYERS	UNIVERSITY OF MASSACHUSETTS AMHERST	AMHERST	82 MASSACHUSETTS	03-83	1	35,702	CP 51,768
5 R01 GM29133-02 22300	HUBBARD, ANN L RECEPTOR-MEDIATED ENDOCYTOSIS IN HEPATOCYTES	JOHNS HOPKINS UNIVERSITY	BALTIMORE	82 MARYLAND	03-83	3	65,588	CBY 92,382
5 R01 GM29185-03 22300	HUBBARD, ANN L BIOLOGY OF DIFFERENTIATED SURFACE DOMAINS IN HEPATOCYTES	JOHNS HOPKINS UNIVERSITY	BALTIMORE	82 MARYLAND	08-83	2	97,830	CP 143,745
5 R01 GM29210-05 22300	FINKELSTEIN, ALAN INTERACTION OF MODEL SYNAPTIC VESICLES WITH LIPID BILAY	YESHIVA UNIVERSITY	NEW YORK	82 NEW YORK	12-82	3	98,805	PHY 183,777
5 R01 GM29234-04 22300	JACOBSON, KENNETH A LATERAL MOBILITY OF MOLECULES AT CELL SURFACE	UNIVERSITY OF NORTH CAROLINA CHAPEL HILL	CHAPEL HILL	82 NORTH CAROLINA	08-83	0	84,521	BBCA 114,526
5 R01 GM29244-03 22300	GILVARG, CHARLES STRUCTURE AND SYNTHESIS OF THE BACTERIAL CELL WALL	PRINCETON UNIVERSITY	PRINCETON	82 NEW JERSEY	08-83	0	37,700	MBC 59,908
5 R01 GM29263-03 22300	RAYNER, MARTIN D NA+-PORES: PHOTOAFFINITY LABELS FOR SUB-UNIT FUNCTION	UNIVERSITY OF HAWAII AT MANOA	HONOLULU	82 HAWAII	08-83	0	47,064	PHY 66,360
5 R01 GM29300-02 22300	BEELER, TROY J CA 2+ FLUXES AND POTENTIAL OF SARCOPLASMIC RETICULUM	U.S. UNIFORMED SERVICES UNIV OF HLTH SCI	BETHESDA	82 MARYLAND	03-83	1	13,700	PB 13,700
5 R01 GM29318-02 22300	LAKOWICZ, JOSEPH R EFFECTS OF HYDROSTATIC PRESSURE ON CELL MEMBRANES	UNIVERSITY OF MARYLAND AT BALTIMORE	BALTIMORE	82 MARYLAND	01-83	1	24,100	BBCA 36,632
1 R01 GM29321-01A1 22300	SALISBURY, JEFFREY L RECEPTOR-MEDIATED ENDOCYTOSIS: MACROMOLECULAR MACHINERY	YESHIVA UNIVERSITY	NEW YORK	82 NEW YORK	08-83	2	63,586	CP 101,500

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CELLULAR BASIS OF DISEASE SECTION										
MEMBRANE STRUCTURE AND FUNCTION										
5	R01 GM29498-02 22300	LANYI, JANOS K CHARACTERIZATION OF A SODIUM PUMP IN H. HALOBIUM	UNIVERSITY OF CALIFORNIA IRVINE	IRVINE	CALIFORNIA	82	06-83	1	52,380	MBC 71,688
5	R01 GM29514-02 22300	SZOKA, FRANCIS C, JR MICROINJECTION INTO CELLS BY A LIPOSOME SYSTEM	UNIVERSITY OF CALIFORNIA SAN FRANCISCO	SAN FRANCISCO	CALIFORNIA	82	03-83	1	48,129	CP 63,049
1	R01 GM29643-01 22300	LOW, PHILIP S DRUG DISTRIBUTION PATTERNS IN BIOLOGICAL MEMBRANES	PURDUE UNIVERSITY WEST LAFAYETTE	WEST LAFAYETTE	INDIANA	82	08-83	2	29,809	BBCB 41,733
5	R01 GM29706-02 22300	GOKEL, GEORGE W CA++ SELECTIVE PEPTIDES FOR METABOLIC CONTROL	UNIVERSITY OF MARYLAND AT BALTIMORE	BALTIMORE	MARYLAND	82	11-82	0	40,555	MCHA 61,644
5	R01 GM29707-02 22300	LIPSON, EDWARD D SYSTEM ANALYSIS OF PHYCOMYCES PHOTORESPONSES	SYRACUSE UNIVERSITY AT SYRACUSE	SYRACUSE	NEW YORK	82	06-83	2	54,136	BBCA 83,165
1	R01 GM29758-01 22300	BAYLEY, HAGAN P PROTEIN TOPOGRAPHY IN TRANSIENT MEMBRANCE STATES	COLUMBIA UNIVERSITY	NEW YORK	NEW YORK	82	01-83	2	63,310	BBCA 89,208
5	R01 GM29765-02 22300	MELLMAN, IRA S ADSORPTIVE ENDOCYTOSIS AND PLASMA MEMBRANE FUNCTION	YALE UNIVERSITY	NEW HAVEN	CONNECTICUT	82	06-83	2	48,859	CP 81,403
5	R01 GM29798-02 22300	RANDALL, LINDA L EXPORT OF PROTEINS IN ESCHERICHIA COLI	WASHINGTON STATE UNIVERSITY	PULLMAN	WASHINGTON	82	03-83	0	57,370	MBC 82,737
5	R01 GM29830-02 22300	MC MAHON, DANIEL S DICTYOSTELIUM DISCOIDEUM PLASMA MEMBRANES	WASHINGTON STATE UNIVERSITY	PULLMAN	WASHINGTON	82	03-83	1	75,990	MBC 110,186
5	R01 GM29836-02 22300	LESTER, H ALLEN INTRACELLULAR TRANSMITTERS, BIOPHYSICAL STUDIES	CALIFORNIA INSTITUTE OF TECHNOLOGY	PASADENA	CALIFORNIA	82	03-83	1	43,545	NEUB 64,447
1	R01 GM29843-01 22300	HONG, JEN-SHIANG BIOCHEMISTRY AND GENETICS OF MEMBRANE FUNCTIONS	BOSTON BIOMEDICAL RESEARCH INSTITUTE	BOSTON	MASSACHUSETTS	82	11-82	4	98,523	MBC 140,289
1	R01 GM29864-01 AM 22300	MENDELSOHN, RICHARD LIPID CONTROL OF MEMBRANE PROTEIN ORGANIZATION	RUTGERS THE STATE UNIV NEW BRUNSWICK	NEW BRUNSWICK	NEW JERSEY	82	01-83	2	61,545	BBCB 80,421
1	R01 GM29963-01 22300	HAZELBAUER, GERALD L MOLECULAR STUDIES OF CHEMORECEPTION	WASHINGTON STATE UNIVERSITY	PULLMAN	WASHINGTON	82	03-83	2	76,892	MBC 107,443
1	R01 GM30062-01 22300	NUCCITELLI, RICHARD L DEVELOPMENT AND MAINTENANCE OF EPITHELIAL CELL POLARITY	UNIVERSITY OF CALIFORNIA DAVIS	DAVIS	CALIFORNIA	82	08-83	2	71,305	CBY 84,850
1	R01 GM30115-01 22300	LIS, LEONARD J HIGH SENSITIVITY MICROCALORIMETRY OF LIPID MIXTURES	ILLINOIS INSTITUTE OF TECHNOLOGY	CHICAGO	ILLINOIS	82	08-83	2	43,286	BBCA 56,931
1	R01 GM30158-01 22300	SCHINDLER, MELVIN S BIODYNAMICS OF NUCLEAR MEMBRANE AND MATRIX	MICHIGAN STATE UNIVERSITY	EAST LANSING	MICHIGAN	82	12-82	2	60,250	BBCA 79,172

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CELLULAR BASIS OF DISEASE SECTION								
MEMBRANE STRUCTURE AND FUNCTION								
1	R01 GM30218-01 22300	WEIGEL, PAUL H ENDOCYTOSIS AND RECYCLING OF THE GALACTOSYL RECEPTOR	UNIVERSITY OF TEXAS MED BR GALVESTON	GALVESTON	82 TEXAS	01-83	59,881 2	CP 79,089
1	R01 GM30219-01 22300	GUSTAFSON, GARY L CONTROL OF INTRACELLULAR PROTEINASE COMPARTMENTATION	UNIVERSITY OF MONTANA	MISSOULA	82 MONTANA	12-82	57,150 2	CBY 79,013
1	R01 GM30243-01A1 22300	KRIEGER, MONTY GENETIC ANALYSIS OF RECEPTOR-MEDIATED ENDOCYTOSIS	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	CAMBRIDGE	82 MASSACHUSETTS	06-83	70,427 2	CTY 91,247
1	R01 GM30244-01 22300	SILBERT, DAVID F MEMBRANE LIPIDS-INTERACTIONS AND CONTROL OF BIOSYNTHESIS	WASHINGTON UNIVERSITY	SAINT LOUIS	82 MISSOURI	01-83	92,209 3	CTY 136,324
1	R01 GM30245-01 22300	FISHER, PAUL A THE MOLECULAR BIOLOGY OF THE NUCLEAR ENVELOPE	ROCKEFELLER UNIVERSITY	NEW YORK	82 NEW YORK	01-83	92,259 2	CTY 130,502
1	R01 GM30299-01 22300	ELSON, ELLIOT L BIOPHYSICAL STUDIES OF CELL SURFACE INTERACTIONS	WASHINGTON UNIVERSITY	SAINT LOUIS	82 MISSOURI	01-83	71,895 2	MBY 106,254
7	R01 GM30324-01 22300	JOHNSON, GARY L REGULATORY PROTEINS OF ADENYLATE CYCLASE	UNIVERSITY OF MASSACHUSETTS MEDICAL SCH	WORCESTER	81 MASSACHUSETTS	11-82	50,997 0	MBY 73,995
3	R01 GM30324-01S1 22300	JOHNSON, GARY L REGULATORY PROTEINS OF ADENYLATE CYCLASE	UNIVERSITY OF MASSACHUSETTS MEDICAL SCH	WORCESTER	82 MASSACHUSETTS	11-82	20,583 0	BIO 1 36,638
5	R01 GM30377-02 22300	NONNER, WOLFGANG F MOLECULAR MECHANISMS OF GATING IN IONIC CHANNELS	UNIVERSITY OF MIAMI	MIAMI	82 FLORIDA	07-83	80,173 1	PHY 154,126
1	P01 GM30387-01 22300	SPUDICH, JAMES A MEMBRANE CHANNELS, RECEPTORS AND ANCHORS	STANFORD UNIVERSITY	STANFORD	82 CALIFORNIA	06-83	289,281 3	SSS 426,530
9	R01 GM30657-04A1 HL 22300	HALL, JAMES E VOLTAGE-DEPENDENT CONDUCTANCE IN MEMBRANES	UNIVERSITY OF CALIFORNIA IRVINE	IRVINE	82 CALIFORNIA	03-83	59,176 2	PHY 71,631
1	R01 GM30666-01 22300	POO, MU-MING BIOPHYSICAL STUDIES OF PROTEIN DIFFUSION IN MEMBRANES	UNIVERSITY OF CALIFORNIA IRVINE	IRVINE	82 CALIFORNIA	04-83	112,714 2	CTY 133,705
1	R01 GM30667-01 22300	HERTZBERG, ELLIOT L PROBES FOR THE STUDY OF GAP JUNCTIONAL COMMUNICATION	BAYLOR COLLEGE OF MEDICINE	HOUSTON	82 TEXAS	04-83	87,306 2	CBY 101,276
5	R01 GM30754-02 22300	GUNN, ROBERT B MECHANISMS AND CELLULAR FUNCTIONS OF ION TRANSPORTS	EMORY UNIVERSITY	ATLANTA	82 GEORGIA	08-83	77,469 0	PHY 115,104
1	R13 GM30792-01 GM 22300	SILVERSTEIN, SAMUEL C LYSOSOMES IN THE REGULATION OF CYTOPLASMIC FUNCTION	GORDON RESEARCH CONFERENCES	KINGSTON	82 RHODE ISLAND	05-83	3,000 0	CBY 3,000
7	R01 GM30819-01 22300	FREIRE, ERNESTO STATISTICAL THERMODYNAMIC STUDIES OF MEMBRANES	UNIVERSITY OF TENNESSEE KNOXVILLE	KNOXVILLE	82 TENNESSEE	12-82	27,150 0	BBCB 35,620

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		CELLULAR BASIS OF DISEASE SECTION MEMBRANE STRUCTURE AND FUNCTION								
1	R01 GM30823-01 22300	DRICKAMER, KURT STRUCTURE OF RECEPTORS FOR ENDOCYTOSIS OF GLYCOPROTEINS	UNIVERSITY OF CHICAGO	CHICAGO	ILLINOIS	82	01-83	2	86,325	CP 124,275
1	R01 GM30969-01 22300	HUI, SEK-WEN MECHANISM OF POLYETHYLENE GLYCOL INDUCED MEMBRANE FUSION	ROSWELL PARK MEMORIAL INSTITUTE	BUFFALO	NEW YORK	82	06-83	2	33,172	BBCB 46,520
1	R01 GM31039-01 22300	COHEN, FREDRIC S ION TRANSPORT AND PHYSIOLOGY OF A-ADRENERGIC STIMULATION	RUSH-PRESBYTERIAN-ST LUKES MEDICAL CTR	CHICAGO	ILLINOIS	82	06-83	2	75,700	PHY 93,520
1	R01 GM31074-01 22300	DEGNAN, KEVIN J PHYSIOLOGY OF CHLORIDE SECRETION	BROWN UNIVERSITY	PROVIDENCE	RHODE ISLAND	82	06-83	2	70,961	PHY 101,356
1	R01 GM31083-01 22300	MURPHY, ALEXANDER J SARCOPLASMIC RETICULUM ATPASE--STRUCTURE AND MECHANISM	UNIVERSITY OF THE PACIFIC	SAN FRANCISCO	CALIFORNIA	82	08-83	2	57,180	PB 78,380
5	R13 GM31136-04 22300	GROSS, PAUL R PHYSIOLOGY AND MOLECULAR BIOLOGY	MARINE BIOLOGICAL LABORATORY	WOODS HOLE	MASSACHUSETTS	82	12-82	1	95,933	CMBD 95,933
1	R01 GM31168-01 22300	AUGUST, J THOMAS PURIFICATION OF CELL SURFACE DIFFERENTIATION ANTIGENS	JOHNS HOPKINS UNIVERSITY	BALTIMORE	MARYLAND	82	06-83	4	122,000	CBY 183,000
1	R01 GM31191-01 AM 22300	THOMPSON, STEPHEN M ELECTROPHYSIOLOGY OF PROTON TRANSPORT BY EPITHELIA	UNIVERSITY OF TEXAS HLTH SCI CTR HOUSTON	HOUSTON	TEXAS	82	06-83	2	49,393	PHY 59,800
5	R01 GM31244-02 22300	KEENAN, THOMAS W ENDOMEMBRANE INTERCONVERSION IN MILK FORMATION	VIRGINIA POLYTECHNIC INST AND ST UNIV	BLACKSBURG	VIRGINIA	82	08-83	1	74,102	CBY 109,671
7	R01 GM31367-01 22300	KOHLER, HEINZ STRUCTURE OF THE MAJOR RED CELL MEMBRANE POLYPEPTIDE	ROSWELL PARK MEMORIAL INSTITUTE	BUFFALO	NEW YORK	82	03-83	0	66,335	PC 94,470
7	R01 GM31506-01 22300	BENTZ, JOSEPH E MEMBRANE FUSION	UNIVERSITY OF CALIFORNIA SAN FRANCISCO	SAN FRANCISCO	CALIFORNIA	82	03-83	1	40,495	BBCB 53,048
1	R01 GM31707-01 22300	SCHINDLER, MELVIN S LATERAL MOBILITY IN THE OUTER MEMBRANE OF BACTERIA	MICHIGAN STATE UNIVERSITY	EAST LANSING	MICHIGAN	82	07-83	2	58,600	MBC 70,490
9	R01 GM31709-16 22300	MINDICH, LEONARD E CELL MEMBRANE SYNTHESIS IN THE CONTROL OF GROWTH	PUBLIC HLTH RES INST OF THE CITY OF NY	NEW YORK	NEW YORK	82	07-83	4	120,910	MBC 168,161
									380,000	597,050
									1,527,612	2,236,440
									17,661,775	25,650,881
									98,933	98,933
									19,668,320	28,583,304

**	1	#CENTERS (P50)
**	6	PROGRAM PROJECTS (P01)
**	276	REGULAR PROJECTS (R01)
**	2	ALL OTHERS (P30, P41, R13, R23, R25)
**	285	TOTALS

T	GRANT NUMBER / PROG-AREA	INVESTIGATOR / PROJECT TITLE	GRANTEE INSTITUTION	CITY	FY / STATE	END-DATE	FUT-YRS AVAILABLE	IRG DOLLARS DIRECT	SUB DOLLARS TOTAL
CELLULAR BASIS OF DISEASE SECTION									
SUMMARY OF CELLULAR BASIS OF DISEASE SECTION									
	***	1	*CENTERS (P50)					380,000	597,050
	***	6	PROGRAM PROJECTS (P01)					1,527,612	2,236,440
	***	455	REGULAR PROJECTS (R01)					29,480,755	42,603,686
	***	2	ALL OTHERS (P30, P41, R13, R23, R25)					98,933	98,933
	***	464	TOTALS					31,487,300	45,536,109

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MOLECULAR BASIS OF DISEASE SECTION									
		ENZYME CATALYSIS AND REGULATION							
2	R01 GM00091-37 22400	RAJAGOPALAN, K V STRUCTURE AND FUNCTION OF ENZYMES--ROLE OF METALS	DUKE UNIVERSITY	DURHAM	82 NORTH CAROLINA	05-83	4	164,164	PC 231,246
5	R01 GM06590-24 22400	REED, LESTER J BIOCHEMISTRY OF ALPHA-KETO ACID DEHYDROGENASE COMPLEXES	UNIVERSITY OF TEXAS AUSTIN	AUSTIN	82 TEXAS	07-83	2	104,587	BIO 141,192
5	R01 GM07261-22 22400	LOWENSTEIN, JOHN M ENZYMATIC & CHEMICAL REACTIONS OF ADENOSINE TRIPHOSPHATE	BRANDEIS UNIVERSITY	WALTHAM	82 MASSACHUSETTS	12-82	1	64,575	PC 103,636
5	R01 GM07768-23 22400	HAGER, LOWELL P ENZYMATIC ACTIVATION MECHANISMS	UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN	URBANA	82 ILLINOIS	08-83	0	82,410	BIO 116,504
5	R01 GM07884-21 22400	PARK, JANE H GLYCERALDEHYDE 3-PHOSPHATE DEHYDROGENASE	VANDERBILT UNIVERSITY	NASHVILLE	82 TENNESSEE	03-83	2	64,285	BIO 97,685
5	R01 GM08822-20 22400	OLSON, JAMES MECHANISM OF AMYLASE ACTION	IOWA STATE UNIVERSITY OF SCIENCE & TECH	AMES	81 IOWA	03-83	0	71,253	PC 87,259
5	R01 GM08963-20 22400	RAY, WILLIAM J, JR MECHANISM OF THE GROUP TRANSFER PROCESS	PURDUE UNIVERSITY WEST LAFAYETTE	WEST LAFAYETTE	82 INDIANA	11-82	1	95,661	PB 141,255
5	R01 GM09293-20 22400	KIRKWOOD, SAMUEL USE OF ENZYMES IN STRUCTURAL CARBOHYDRATE CHEMISTRY	UNIVERSITY OF MINNESOTA OF MNPLS-ST PAUL	MINNEAPOLIS	82 MINNESOTA	03-83	2	45,415	BIO 61,764
5	R01 GM09587-21 22400	GRAVES, DONALD J INTERCONVERSION & REGULATION OF GLYCOGEN METABOLISM	IOWA STATE UNIVERSITY OF SCIENCE & TECH	AMES	82 IOWA	12-82	2	69,775	BIO 85,955
5	R01 GM10287-20 22400	FRIDOVICH, IRWIN BIOLOGY OF SUPEROXIDE RADICAL & SUPEROXIDE DISMUTASES	DUKE UNIVERSITY	DURHAM	82 NORTH CAROLINA	08-83	1	118,664	BIO 177,996
5	R01 GM10451-18 22400	BERNHARD, SIDNEY A KINETIC ANALYSIS OF ENZYME CATALYSIS	UNIVERSITY OF OREGON	EUGENE	82 OREGON	06-83	3	66,471	BIO 94,682
5	R01 GM11040-18 22400	BRIGHT, HAROLD J MECHANISM OF ENZYME ACTION	UNIVERSITY OF PENNSYLVANIA	PHILADELPHIA	82 PENNSYLVANIA	03-83	0	92,555	PC 152,716
5	R01 GM11105-20 22400	FRANK, LEONARD METABOLISM OF CERTAIN AMINO ACIDS	UNIVERSITY OF MARYLAND AT BALTIMORE	BALTIMORE	82 MARYLAND	05-83	0	89,028	BIO 135,323
5	R01 GM11106-20 22400	MASSEY, VINCENT BIOLOGICAL OXIDATION MECHANISMS	UNIVERSITY OF MICHIGAN AT ANN ARBOR	ANN ARBOR	82 MICHIGAN	08-83	0	149,578	BIO 236,333
5	R01 GM11983-19 22400	LIN, EDMUND C GLYCEROL DISSIMILATION AND ITS REGULATION IN BACTERIA	HARVARD UNIVERSITY	BOSTON	82 MASSACHUSETTS	04-83	2	87,634	MBC 171,587
5	R01 GM12551-18 22400	BURNS, RICHARD O MOLECULAR MECHANISMS OF BIOLOGICAL CONTROL	DUKE UNIVERSITY	DURHAM	82 NORTH CAROLINA	04-83	2	61,410	MBC 92,115

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		MOLECULAR BASIS OF DISEASE SECTION ENZYME CATALYSIS AND REGULATION						
5	R01 GM12633-19 22400	ABELES, ROBERT H ENZYME MECHANISMS AND ENZYME INHIBITORS	BRANDEIS UNIVERSITY	WALTHAM	82 MASSACHUSETTS	11-82	0 78,338	BIO 126,288
5	R01 GM13037-17 22400	MEHLER, ALAN H STRUCTURE AND FUNCTION OF AMINOACYL-TRNA SYNTHETASES	MEDICAL COLLEGE OF WISCONSIN	MILWAUKEE	82 WISCONSIN	03-83	1 78,022	BIO 116,533
2	R01 GM13116-17 22400	STUEHR, JOHN E KINETIC INVESTIGATION OF BIOCHEMICAL REACTIONS	CASE WESTERN RESERVE UNIVERSITY	CLEVELAND	82 OHIO	03-83	3 63,380	BIO 94,684
5	R01 GM13292-18 22400	HAMMES, GORDON G KINETICS OF PHYSIOLOGICALLY IMPORTANT REACTIONS	CORNELL UNIVERSITY ITHACA	ITHACA	82 NEW YORK	11-82	2 140,980	BBCA 213,925
5	R01 GM13777-15 22400	KALLEN, ROLAND G BIOCHEMICAL CATALYSIS MECHANISMS--C-C & C-N BONDS	UNIVERSITY OF PENNSYLVANIA	PHILADELPHIA	82 PENNSYLVANIA	11-82	2 80,847	BIO 133,398
5	R01 GM14033-16 22400	SHRAGO, EARL S CONTROL MECHANISMS IN INTERMEDIARY METABOLISM	UNIVERSITY OF WISCONSIN MADISON	MADISON	82 WISCONSIN	12-82	2 50,751	PC 72,144
5	R01 GM14276-18 22400	GIBSON, QUENTIN H KINETICS OF ENZYMES AND HEMOGLOBIN-LIGAND REACTIONS	CORNELL UNIVERSITY ITHACA	ITHACA	82 NEW YORK	05-83	1 97,066	BMT 143,108
5	R01 GM14945-16 22400	WESTHEAD, EDWARD W, JR DIVALENT CATIONS IN ENOLASE AND OTHER BIOLOGICAL SYSTEMS	UNIVERSITY OF MASSACHUSETTS AMHERST	AMHERST	82 MASSACHUSETTS	05-83	0 61,773	BIO 87,906
5	R01 GM15102-15 22400	KOHLHAW, GUNTER B REGULATION OF LEUCINE BIOSYNTHESIS	PURDUE UNIVERSITY WEST LAFAYETTE	WEST LAFAYETTE	82 INDIANA	11-82	1 51,638	BIO 78,923
2	R01 GM15188-15A1 22400	FISHER, HARVEY F STRUCTURE AND MECHANISMS OF ACTION OF ENZYMES	UNIVERSITY OF KANSAS COL HLTH SCI & HOSP	KANSAS CITY	82 KANSAS	03-83	4 72,115	BIO 95,366
5	R01 GM16564-14 22400	FIFE, THOMAS H ENZYMATIC AND NONENZYMATIC REACTIONS OF ACYL PHOSPHATES	UNIVERSITY OF SOUTHERN CALIFORNIA	LOS ANGELES	82 CALIFORNIA	03-83	0 41,179	BIO 60,121
5	R01 GM16916-09 22400	SPIVEY, HOWARD O PROPERTIES OF CONCENTRATED ENZYME SOLUTIONS	OKLAHOMA STATE UNIVERSITY	STILLWATER STILLWATER	82 OKLAHOMA	03-83	0 35,405	PC 46,381
5	R01 GM17534-12 22400	NISHIMURA, JONATHAN S STUDY OF SUCCINYL-COA SYNTHETASE AND RELATED ENZYMES	UNIVERSITY OF TEXAS HLTH SCI CTR SAN ANT	SAN ANTONIO	82 TEXAS	08-83	1 56,735	PBC 77,160
5	R01 GM17575-11 22400	GORENSTEIN, DAVID G NMR PROBES OF ENZYMES AND NUCLEIC ACIDS	UNIVERSITY OF ILLINOIS CHICAGO CIRCLE	CHICAGO	82 ILLINOIS	12-82	2 49,212	BBCB 75,288
5	R01 GM18172-12 22400	FRUTON, JOSEPH S PROTEIN CONFORMATION AND ENZYME CATALYSIS	YALE UNIVERSITY	NEW HAVEN	82 CONNECTICUT	05-83	2 66,892	BIO 105,689
5	R01 GM18325-12 22400	WOLFENDEN, RICHARD V CHEMICAL MECHANISMS OF BIOSYNTHESIS	UNIVERSITY OF NORTH CAROLINA CHAPEL HILL	CHAPEL HILL	82 NORTH CAROLINA	06-83	2 83,653	BIO 112,911

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MOLECULAR BASIS OF DISEASE SECTION										
ENZYME CATALYSIS AND REGULATION										
5	R01 GM18453-08 22400	SILVERSTEIN, EMANUEL ENZYME MECHANISM AND CONTROL	DOWNSTATE MEDICAL CENTER	NEW YORK	NEW YORK	81	11-82	0	53,859	BIO 76,747
5	R01 GM18628-12 22400	TAKAHASHI, MARK T REGULATION OF THREONINE-SENSITIVE ASPARTOKINASE ACTIVITY	RUTGERS MEDICAL SCHOOL	PISCATAWAY	NEW JERSEY	82	08-83	0	55,390	BMT 91,670
2	R01 GM18938-11 22400	CLELAND, WILLIAM W DETERMINATION OF ENZYME MECHANISMS BY KINETIC STUDIES	UNIVERSITY OF WISCONSIN MADISON	MADISON	WISCONSIN	82	12-82	4	90,000	BIO 126,701
2	R01 GM19037-09 22400	KAISER, EMIL T PHOSPHATE TRANSFER ENZYMES	UNIVERSITY OF CHICAGO	CHICAGO	ILLINOIS	82	12-82	3	75,214	BIO 113,070
2	R01 GM19091-12 22400	WAKIL, SALIH J THE METABOLISM AND CONTROL OF FATTY ACIDS	BAYLOR COLLEGE OF MEDICINE	HOUSTON	TEXAS	82	08-83	4	162,258	PC 209,871
5	R01 GM19643-09 22400	HAGEMAN, JAMES H SERINE PROTEASES AND PROTEIN TURNOVER IN BACILLI	NEW MEXICO STATE UNIVERSITY LAS CRUCES	LAS CRUCES	NEW MEXICO	81	11-82	0	38,580	BIO 55,725
5	R01 GM19822-23 22400	KENNEDY, EUGENE P METABOLISM AND FUNCTION OF COMPLEX LIPIDS	HARVARD UNIVERSITY	BOSTON	MASSACHUSETTS	82	11-82	0	61,283	MBC 117,861
5	R01 GM19875-11 22400	ROSE, ZELDA B ENZYMES OF 2,3-DIPHOSPHOGLYCERATE METABOLISM	INSTITUTE FOR CANCER RESEARCH	PHILADELPHIA	PENNSYLVANIA	82	08-83	2	65,900	PC 106,758
5	R01 GM20011-10 22400	WALSH, CHRISTOPHER T ENZYMATIC REACTION MECHANISMS	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	CAMBRIDGE	MASSACHUSETTS	82	12-82	3	117,297	PC 198,871
5	R01 GM20077-08 22400	BARDEN, ROLAND E AFFINITY LABELS FOR ACYL-COA UTILIZING ENZYME	UNIVERSITY OF WYOMING	LARAMIE	WYOMING	82	03-83	1	45,621	BIO 63,413
5	R01 GM20122-10 22400	PIGIET, VINCENT P, JR BASIS FOR REGULATION OF RIBONUCLEOTIDE REDUCTASE	JOHNS HOPKINS UNIVERSITY	BALTIMORE	MARYLAND	82	06-83	1	52,569	PBC 78,854
5	R01 GM20172-08 22400	TAYLOR, BARRIE F ENZYMES OF AROMATIC OXIDATIONS FROM MICROORGANISMS	UNIVERSITY OF MIAMI	MIAMI	FLORIDA	82	06-83	0	68,993	MBC 98,015
5	R01 GM20419-05 22400	CASTRIC, PETER A PURIFICATION AND CHARACTERIZATION OF UREA AMIDOYLASE	DUQUESNE UNIVERSITY	PITTSBURGH	PENNSYLVANIA	81	11-82	0	25,910	BIO 42,695
5	R01 GM20501-08 22400	DENNIS, EDWARD A ACTION OF LIPOLYTIC ENZYMES	UNIVERSITY OF CALIFORNIA SAN DIEGO	LA JOLLA	CALIFORNIA	82	05-83	3	77,469	PC 100,771
5	R01 GM20656-24 22400	COLOWICK, SIDNEY P ENZYMATIC OXIDATION AND PHOSPHORYLATION	VANDERBILT UNIVERSITY	NASHVILLE	TENNESSEE	82	11-82	1	96,114	BIO 147,406
5	R01 GM20716-09 22400	SUELTER, CLARENCE H COMPARATIVE ENZYMOLOGY OF NORMAL AND ABNORMAL TISSUE	MICHIGAN STATE UNIVERSITY	EAST LANSING	MICHIGAN	82	05-83	1	45,195	BIO 63,725

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ENZYME CATALYSIS AND REGULATION								
5 R01 GM20853-20	BENDER, MYRON L	NORTHWESTERN UNIVERSITY		82	06-83	1	BIO	
22400	MECHANISM OF ACTION OF PROTEASES		EVANSTON	ILLINOIS			35,317	48,509
5 R01 GM20884-09	FUCHS, JAMES A	UNIVERSITY OF MINNESOTA OF MNPLS-ST PAUL		82	08-83	0	MG	
22400	DEOXYRIBONUCLEOTIDE METABOLISM IN ESCHERICHIA COLI		MINNEAPOLIS	MINNESOTA			63,504	88,271
5 R01 GM20888-25	JENCKS, WILLIAM P	BRANDEIS UNIVERSITY		82	11-82	1	BIO	
22400	CHEMISTRY AND BIOCHEMISTRY OF ENERGY TRANSFER		WALTHAM	MASSACHUSETTS			79,842	128,662
5 R01 GM20940-19	ROSE, IRWIN A	INSTITUTE FOR CANCER RESEARCH		82	12-82	1	PC	
22400	MECHANISMS OF PROTON AND PHOSPHORYL TRANSFER		PHILADELPHIA	PENNSYLVANIA			64,399	100,159
5 R01 GM21083-07	SCHRAMM, VERN L	TEMPLE UNIVERSITY		82	01-83	0	BIO	
22400	REGULATION OF ADENINE NUCLEOTIDE POOLS		PHILADELPHIA	PENNSYLVANIA			36,572	55,584
5 R01 GM21098-09	FRAENKEL, DAN G	HARVARD UNIVERSITY		82	07-83	0	MBC	
22400	ENZYMES AND PATHWAYS IN GLYCOLYSIS MUTANTS		BOSTON	MASSACHUSETTS			65,185	127,632
5 R01 GM21199-14	SIGMAN, DAVID S	UNIVERSITY OF CALIFORNIA LOS ANGELES		82	11-82	2	BIO	
22400	METAL ION FUNCTION IN ENZYMES AND RECEPTOR PROTEINS		LOS ANGELES	CALIFORNIA			65,575	85,438
5 R01 GM21200-09	COLMAN, ROBERTA F	UNIVERSITY OF DELAWARE		82	05-83	2	BIO	
22400	NUCLEOTIDE SITES OF GLUTAMATE DEHYDROGENASE		NEWARK	DELAWARE			53,951	82,563
5 R01 GM21226-21	KAMIN, HENRY	DUKE UNIVERSITY		82	05-83	1	BIO	
22400	BIOLOGICAL OXIDATIONS IN MITOCHONDRIA AND MICROSOMES		DURHAM	NORTH CAROLINA			91,974	134,461
5 R01 GM21361-09	THOMPSON, W JOSEPH	UNIVERSITY OF TEXAS HLTH SCI CTR HOUSTON		82	06-83	1	BIO	
22400	BIOLOGICAL ROLE OF CYCLIC NUCLEOTIDE PHOSPHODIESTERASE		HOUSTON	TEXAS			94,867	130,308
5 R01 GM21436-08	DATTA, PRASANTA	UNIVERSITY OF MICHIGAN AT ANN ARBOR		82	02-83	2	BIO	
22400	ALLOSTERIC ENZYMES AND METABOLIC REGULATION		ANN ARBOR	MICHIGAN			51,807	81,855
5 R01 GM21444-18	WILLIAMS, CHARLES H, JR	UNIVERSITY OF MICHIGAN AT ANN ARBOR		82	08-83	1	BIO	
22400	PYRIDINE NUCLEOTIDE-DISULFIDE OXIDOREDUCTASES		ANN ARBOR	MICHIGAN			51,754	68,148
2 R01 GM21450-07	WHITE, EMIL H	JOHNS HOPKINS UNIVERSITY		82	11-82	2	BNP	
22400	ENZYME ACTIVE SITE MAPPING UTILIZING CARBONIUM IONS		BALTIMORE	MARYLAND			76,902	112,958
5 R01 GM21519-08	FEE, JAMES A	UNIVERSITY OF MICHIGAN AT ANN ARBOR		82	11-82	2	BMT	
22400	MECHANISMS OF SUPEROXIDE DISMUTASES		ANN ARBOR	MICHIGAN			74,719	118,056
5 R01 GM21643-08	WALSH, CHRISTOPHER T	MASSACHUSETTS INSTITUTE OF TECHNOLOGY		82	04-83	0	BIO	
22400	COENZYME ANALOGUES AS PROBES OF FLAVOENZYME CATALYSIS		CAMBRIDGE	MASSACHUSETTS			62,933	85,041
5 R01 GM21659-08	KNOWLES, JEREMY R	HARVARD UNIVERSITY		82	11-82	1	BIO	
22400	MECHANISMS OF ENZYME CATALYSIS		CAMBRIDGE	MASSACHUSETTS			88,298	135,979

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		MOLECULAR BASIS OF DISEASE SECTION ENZYME CATALYSIS AND REGULATION										
2	R01 GM22125-07 22400	WHITELEY, JOHN M PTERIDINE DEPENDENT HYDROXYLASE FROM LIVER AND BRAIN	SCRIPPS CLINIC AND RESEARCH FOUNDATION	LA JOLLA	CALIFORNIA	82	03-83	4	84,442		PC	125,665
5	R01 GM22130-08 22400	BRILL, WINSTON J MOLYBDENUM METABOLISM	UNIVERSITY OF WISCONSIN MADISON	MADISON	WISCONSIN	82	07-83	0	64,158		MBC	91,746
5	R01 GM22300-08 22400	BOLEN, DAVID W ELEMENTARY STEPS IN ENZYME CATALYSIS	SOUTHERN ILLINOIS UNIVERSITY CARBONDALE	CARBONDALE	ILLINOIS	82	08-83	1	40,250		PB	58,354
2	R01 GM22350-07 22400	GERLT, JOHN A ENZYMOLOGY OF PHOSPHORUS METABOLISM	YALE UNIVERSITY	NEW HAVEN	CONNECTICUT	82	06-83	2	80,549		BIO	122,198
5	R01 GM22427-07 22400	LOEWUS, FRANK A INOSITOL METABOLISM	WASHINGTON STATE UNIVERSITY	PULLMAN	WASHINGTON	81	02-83	0	80,786	1	BIO	117,140
5	R01 GM22430-06 22400	HUANG, CHING-HSIEN PROTEIN KINASE--STRUCTURE AND BIOLOGICAL ACTIVITY	UNIVERSITY OF VIRGINIA CHARLOTTESVILLE	CHARLOTTESVILLE	VIRGINIA	82	06-83	0	76,448		PBC	109,707
5	R01 GM22434-06 22400	ANDERSON, PAUL M CYNATE--REACTION WITH CYANASE & AMIDOTRANSFERASE	UNIVERSITY OF MINNESOTA OF MNPLS-ST PAUL	MINNEAPOLIS	MINNESOTA	82	03-84	0	30,450		BIO	41,412
5	R01 GM22466-07 22400	NUNN, WILLIAM D CONTROL OF LIPID METABOLISM IN ESCHERICHIA COLI	UNIVERSITY OF CALIFORNIA IRVINE	IRVINE	CALIFORNIA	82	07-83	1	51,596		MBC	71,353
3	R01 GM22466-07S1 22400	NUNN, WILLIAM D CONTROL OF LIPID METABOLISM IN ESCHERICHIA COLI	UNIVERSITY OF CALIFORNIA IRVINE	IRVINE	CALIFORNIA	82	07-83	1	26,505		MBC	36,974
5	R01 GM22579-08 22400	WOOD, HARLAND G SUBUNIT-SUBUNIT INTERACTIONS OF TRANSCARBOXYLASE	CASE WESTERN RESERVE UNIVERSITY	CLEVELAND	OHIO	82	08-83	2	128,474		BIO	187,541
5	R01 GM22792-06 22400	RUBIN, CHARLES S CYCLIC AMP AND PROTEIN KINASES IN CELL REGULATION	YESHIVA UNIVERSITY	NEW YORK	NEW YORK	82	03-83	2	71,773		BIO	132,208
5	R01 GM22933-05 22400	VAN ETTEN, ROBERT L THE ANOMALOUS KINETICS OF ARYL SULFATASE A	PURDUE UNIVERSITY WEST LAFAYETTE	WEST LAFAYETTE	INDIANA	82	12-82	3	72,864		BIO	102,010
2	R01 GM22982-07 22400	OPPENHEIMER, NORMAN J STRUCTURE/FUNCTION RELATIONS IN PYRIDINE COENZYMES	UNIVERSITY OF CALIFORNIA SAN FRANCISCO	SAN FRANCISCO	CALIFORNIA	82	04-83	4	84,759		BIO	109,579
5	R01 GM23028-06 22400	BUTLER, LARRY G RELATIONSHIPS OF PHOSPHOMONO- AND PHOSPHODIESTERASES	PURDUE UNIVERSITY WEST LAFAYETTE	WEST LAFAYETTE	INDIANA	82	06-83	2	56,707		BIO	76,766
5	R01 GM23123-25 22400	NODA, LAFAYETTE H HIGH ENERGY PHOSPHATE TRANSFERRING ENZYMES	DARTMOUTH COLLEGE	HANOVER	NEW HAMPSHIRE	82	08-83	0	101,594		PB	150,479
5	R01 GM23193-06 22400	ALLEN, CHARLES M, JR MECHANISM AND REGULATION OF UNDECAPRENOL BIOSYNTHESIS	UNIVERSITY OF FLORIDA	GAINESVILLE	FLORIDA	82	06-83	0	41,340		MBC	60,770

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	MOLECULAR BASIS OF DISEASE SECTION ENZYME CATALYSIS AND REGULATION								
5	R01 GM23453-05 22400	KRUMDIECK, CARLOS L STUDIES ON THE BIOCHEMISTRY PTEROYPOLYGLUTAMATES	UNIVERSITY OF ALABAMA IN BIRMINGHAM	BIRMINGHAM	82 ALABAMA	08-83	0 55,609	BIO 75,517	
5	R01 GM23474-06 22400	MAY, SHELDON W NON-HEME IRON OXYGENASE CATALYSIS	GEORGIA INSTITUTE OF TECHNOLOGY	ATLANTA	82 GEORGIA	08-83	0 80,221	PB 122,418	
5	R01 GM23529-06 22400	VILLAFRANCA, JOSEPH J STRUCTURE AND CONTROL OF GLUTAMINE SYNTHETASES	PENNSYLVANIA STATE UNIVERSITY UNIV PARK	UNIVERSITY PARK	82 PENNSYLVANIA	12-82	2 62,587	BMT 84,218	
5	R01 GM23642-06 22400	MARNETT, LAWRENCE J PROSTAGLANDIN SYNTHETASE	WAYNE STATE UNIVERSITY	DETROIT	82 MICHIGAN	12-82	0 49,542	BIO 73,376	
5	R01 GM23679-03 22400	LAWTON, RICHARD G REAGENTS FOR EQUILIBRIUM PROTEIN CROSS-LINKS	UNIVERSITY OF MICHIGAN AT ANN ARBOR	ANN ARBOR	81 MICHIGAN	09-82	0 47,047	BIO 74,334	
2	R01 GM23913-05A1 22400	FULCO, ARMAND J SOLUBLE CYTOCHROME P-450 HYDROXYLASES FROM BACTERIA	UNIVERSITY OF CALIFORNIA LOS ANGELES	LOS ANGELES	82 CALIFORNIA	07-83	3 84,828	PB 114,543	
2	R01 GM24129-06 22400	BENKOVIC, STEPHEN J THE TRANSFORMYLASE ENZYMES	PENNSYLVANIA STATE UNIVERSITY UNIV PARK	UNIVERSITY PARK	82 PENNSYLVANIA	06-83	4 114,661	ET 147,929	
5	R01 GM24290-05 22400	GARBERS, DAVID L GUANYLATE CYCLASE: LARGE SCALE PURIFICATION	VANDERBILT UNIVERSITY	NASHVILLE	82 TENNESSEE	12-82	0 66,427	BIO 102,630	
5	R01 GM24348-04 22400	GUILLORY, RICHARD J COMPLEX I CHARACTERIZATION WITH PHOTOAFFINITY LABELS	UNIVERSITY OF HAWAII AT MANOA	HONOLULU	82 HAWAII	03-83	1 35,642	PB 49,899	
5	R01 GM24392-03 22400	MATTA, KHUSHI L STUDIES RELATED TO ENDOGLYCOSIDASES	ROSWELL PARK MEMORIAL INSTITUTE	BUFFALO	81 NEW YORK	08-83	0 43,541	MCHA 63,092	
2	R01 GM24497-05 22400	TABITA, FRED R FUNCTION AND ASSEMBLY OF CO2 ASSIMILATORY ENZYMES	UNIVERSITY OF TEXAS AUSTIN	AUSTIN	82 TEXAS	12-82	4 69,318	BIO 92,529	
5	R01 GM24561-05 22400	HUNTER, F EDMUND, JR GSH-SPECIFIC ENZYMES ON ORGANONITRATES, PROSTAGLANDINS	WASHINGTON UNIVERSITY	SAINT LOUIS	82 MISSOURI	12-82	0 39,500	BIO 61,225	
2	R01 GM24658-12 22400	ZALKIN, HOWARD GLUTAMINE AMIDOTRANSFERASE STRUCTURE/FUNCTION/REGULATION	PURDUE UNIVERSITY WEST LAFAYETTE	WEST LAFAYETTE	82 INDIANA	06-83	4 104,504	MBC 137,158	
5	R01 GM24667-05 22400	MIDELFORT, CHRISTIAN F OXYGEN LABELING STUDIES IN ATP DEPENDENT ENZYMES	YESHIVA UNIVERSITY	NEW YORK	82 NEW YORK	12-82	2 57,802	PB 106,222	
5	R01 GM24686-05 22400	GRAY, WILLIAM R STRUCTURE, FUNCTION, GENETICS OF HISTIDINOL DH'ASE	UNIVERSITY OF UTAH	SALT LAKE CITY	82 UTAH	03-83	1 78,678	BIO 108,683	
5	R01 GM24689-05 22400	LIPSCOMB, JOHN D OXYGENASE ENZYME MECHANISM	UNIVERSITY OF MINNESOTA OF MNPLS-ST PAUL	MINNEAPOLIS	82 MINNESOTA	12-82	1 54,800	PB 72,825	

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	MOLECULAR BASIS OF DISEASE SECTION ENZYME CATALYSIS AND REGULATION								
5	R01 GM24765-03 22400	BYERS, LARRY D LIGAND INDUCED CHANGES IN MULTI-SUBUNIT ENZYMES	TULANE UNIVERSITY OF LOUISIANA	NEW ORLEANS	81 LOUISIANA	11-82	0	25,769	BIO 36,504
5	R01 GM24908-05 22400	MATTHEWS, ROWENA G REGULATION OF FOLATE METABOLISM	UNIVERSITY OF MICHIGAN AT ANN ARBOR	ANN ARBOR	82 MICHIGAN	03-83	3	60,077	BIO 93,762
5	R01 GM24913-05 22400	WOOD, HARLAND G UTILIZATION OF CO2 AND THE TOTAL SYNTHESIS OF ACETATE	CASE WESTERN RESERVE UNIVERSITY	CLEVELAND	82 OHIO	03-83	0	69,775	BIO 97,561
5	R01 GM24967-03 22400	AULD, DAVID S LOW TEMPERATURE ENZYME DYNAMICS	HARVARD UNIVERSITY	BOSTON	82 MASSACHUSETTS	08-83	1	31,235	BBCA 48,414
5	R01 GM25055-05 22400	ABBOTT, MITCHEL T PYRIMIDINE & PROLYL ALPHA-KETOGLUTARATE DIOXYGENASES	SAN DIEGO STATE UNIVERSITY	SAN DIEGO	82 CALIFORNIA	04-83	0	33,111	BIO 46,687
5	R01 GM25154-05 22400	SILVERMAN, DAVID N CATALYTIC MECHANISM OF CARBONIC ANHYDRASE	UNIVERSITY OF FLORIDA	GAINESVILLE	82 FLORIDA	03-83	1	70,866	PB 102,109
5	R01 GM25323-05 22400	MOORE, STANFORD BIOCHEMISTRY OF NUCLEASES	ROCKEFELLER UNIVERSITY	NEW YORK	82 NEW YORK	06-83	0	82,761	PBC 127,655
2	R01 GM25347-04 22400	GILBERT, HIRAM F ENZYME CATALYSIS OF PROTON TRANSFER FROM CARBON	BAYLOR COLLEGE OF MEDICINE	HOUSTON	82 TEXAS	11-82	2	52,939	PB 65,800
5	R01 GM25422-05 22400	QUE, LAWRENCE, JR NON-HEME IRON DIOXYGENASES: STRUCTURE AND MECHANISM	CORNELL UNIVERSITY ITHACA	ITHACA	82 NEW YORK	06-83	3	75,150	BMT 106,799
2	R01 GM25478-04 22400	HEHRE, EDWARD J SCOPE AND MECHANISM OF ENZYME-CATALYZED GLYCOSYLATION	YESHIVA UNIVERSITY	NEW YORK	82 NEW YORK	08-83	4	71,069	BIO 132,188
5	R01 GM25486-04 22400	FRERMAN, FRANK E ACYL COA DEHYDROGENASES--REGULATION OF BETA-OXIDATION	MEDICAL COLLEGE OF WISCONSIN	MILWAUKEE	81 WISCONSIN	12-82	0	76,274	BIO 91,312
5	R01 GM25487-03 22400	ORNSTON, L NICHOLAS ORIGINS OF METABOLIC DIVERSITY	YALE UNIVERSITY	NEW HAVEN	80 CONNECTICUT	11-82	0	54,323	BIO 83,101
3	R01 GM25487-03S1 22400	ORNSTON, L NICHOLAS ORIGINS OF METABOLIC DIVERSITY	YALE UNIVERSITY	NEW HAVEN	81 CONNECTICUT	11-82	0	12,156	BIO 19,206
5	R01 GM25654-04 22400	OLIVERA, BALDOMERO M PYRIDINE NUCLEOTIDES--TURNOVER AND REGULATION	UNIVERSITY OF UTAH	SALT LAKE CITY	82 UTAH	01-83	1	33,707	MBY 48,650
2	R01 GM25697-04 22400	MILLER, JON P MAPPING CAMP AND CGMP BINDING SITES ON PROTEIN KINASES	SRI INTERNATIONAL	MENLO PARK	82 CALIFORNIA	11-82	2	75,335	BIO 146,453
5	R01 GM25735-04 22400	CRAWFORD, IRVING P MUTATIONAL PERTURBATION OF SUBUNIT INTERACTIONS	UNIVERSITY OF IOWA	IOWA CITY	81 IOWA	03-83	0	56,916	MBC 78,430

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	MOLECULAR BASIS OF DISEASE SECTION ENZYME CATALYSIS AND REGULATION								
2	R01 GM25765-05 NS 22400	KLINMAN, JUDITH P DOPAMINE-B-HYDROXYLASE: MOLECULAR MECHANISMS	UNIVERSITY OF CALIFORNIA	BERKELEY BERKELEY	82 CALIFORNIA	05-83	2 102,463	BIO 128,629	
5	R01 GM26134-09 22400	SUHADOLNIK, ROBERT J CELLULAR ROLE OF NAD, NAD ANALOGS, QTRNA & BIOSYNTHESIS	TEMPLE UNIVERSITY	PHILADELPHIA	82 PENNSYLVANIA	05-83	1 70,760	PC 107,468	
5	R01 GM26156-03 22400	CRONAN, JOHN E, JR PROTEIN LIPID INTERACTION	UNIVERSITY OF ILLINOIS	URBANA-CHAMPAIGN URBANA	82 ILLINOIS	12-82	0 25,908	MBC 35,960	
2	R01 GM26237-04 22400	KANTROWITZ, EVAN R THE MOLECULAR BASIS OF CELLULAR CONTROL MECHANISMS	BOSTON COLLEGE	CHESTNUT HILL	82 MASSACHUSETTS	03-83	3 94,792	BIO 125,244	
2	R01 GM26290-04 22400	PEGG, ANTHONY E INVESTIGATIONS OF MAMMALIAN AMINOPROPYLTRANSFERASES	PENNSYLVANIA STATE UNIV	HERSHEY MED CTR HERSHEY	82 PENNSYLVANIA	03-83	4 64,228	BIO 86,893	
5	R01 GM26293-03 22400	BAUERLE, RONALD H GENETIC ANALYSIS OF THE ASSEMBLY OF AN ENZYME COMPLEX	UNIVERSITY OF VIRGINIA	CHARLOTTESVILLE CHARLOTTESVILLE	82 VIRGINIA	03-83	0 54,787	MBC 79,441	
5	R01 GM26387-03 22400	MALEY, FRANK FOLATE BINDING SITES IN THYMIDYLATE SYNTHETASE	NEW YORK STATE DEPARTMENT	OF HEALTH ALBANY	81 NEW YORK	12-82	0 16,500	BIO 16,500	
5	R01 GM26430-18 22400	TOUSTER, OSCAR BIOCHEMICAL STUDIES ON LYSOSOMES AND RELATED ENZYMES	VANDERBILT UNIVERSITY	NASHVILLE	82 TENNESSEE	06-83	2 73,655	CBY 115,840	
2	R01 GM26488-04 22400	GUYNN, ROBERT W KINETICS AND THERMODYNAMICS OF SERINE BIOSYNTHESIS	UNIVERSITY OF TEXAS HLTH SCI CTR	HOUSTON HOUSTON	82 TEXAS	03-83	2 61,068	BIO 81,424	
5	R01 GM26559-03 22400	HELLER, JOHN S POST-TRANSLATIONAL CONTROL OF ORNITHINE DECARBOXYLASE	YALE UNIVERSITY	NEW HAVEN	81 CONNECTICUT	11-82	0 48,575	PBC 75,855	
5	R01 GM26582-05 22400	WEDLER, FREDERICK C CATALYTIC AND REGULATORY MECHANISMS OF KEY ENZYMES	PENNSYLVANIA STATE UNIVERSITY	UNIV PARK UNIVERSITY PARK	82 PENNSYLVANIA	08-83	0 58,470	BIO 79,321	
5	R01 GM26623-02 22400	WONG, SHAN S ENZYME REGULATION BY PROTEIN-PROTEIN INTERACTION	UNIVERSITY OF LOWELL	LOWELL	82 MASSACHUSETTS	12-82	1 41,289	BIO 70,548	
2	R01 GM26643-04 22400	THORPE, COLIN FLAVOPROTEINS IN FATTY ACID METABOLISM	UNIVERSITY OF DELAWARE	NEWARK	82 DELAWARE	06-83	4 60,542	PB 85,396	
5	R01 GM26682-03 22400	JORDAN, FRANK PURINE NUCLEOSIDE PHOSPHORYLASE STUDIES	RUTGERS THE STATE UNIV	NEWARK NEWARK	81 NEW JERSEY	03-83	0 38,917	BIO 61,489	
5	R01 GM26728-03 22400	SEGEL, IRWIN H ENZYMOLOGY OF SULFATE ACTIVATION AND TRANSFER	UNIVERSITY OF CALIFORNIA	DAVIS DAVIS	81 CALIFORNIA	10-82	0 54,185	BIO 70,517	
5	R01 GM26730-03 22400	DAWSON, JOHN H SPECTROSCOPY AND MECHANISMS OF HEME IRON OXYGENASE	UNIVERSITY OF SOUTH CAROLINA AT COLUMBIA	COLUMBIA	81 SOUTH CAROLINA	06-83	0 38,329	BMT 51,589	

TABLE-4 RESEARCH GRANTS ACTIVE AS OF 09-30-82 BY PROGRAM AREA AND GRANT NUMBER

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MOLECULAR BASIS OF DISEASE SECTION								
ENZYME CATALYSIS AND REGULATION								
2 R01 GM26738-04 22400	TRAUGH, JOLINDA A CYCLIC NUCLEOTIDE-INDEPENDENT PHOSPHORYLATION	UNIVERSITY OF CALIFORNIA RIVERSIDE	RIVERSIDE	82 CALIFORNIA	06-83	2	57,901	MBY 77,190
5 R01 GM26834-03 22400	HORNER, WILLIAM H GUANIDINE METABOLISM IN MAMMALS	GEORGETOWN UNIVERSITY	WASHINGTON	82 DIST OF COL	03-83	0	42,043	PBC 59,862
5 R01 GM26900-03 22400	IVES, DAVID H MECHANISMS OF NUCLEOSIDE KINASE REGULATION	OHIO STATE UNIVERSITY	COLUMBUS	81 OHIO	06-83	0	33,228	BIO 45,115
5 R01 GM27003-13 22400	VAN ETTEN, ROBERT L THE ACTIVE SITES OF ACID PHOSPHATASES	PURDUE UNIVERSITY WEST LAFAYETTE	WEST LAFAYETTE	82 INDIANA	06-83	1	71,890	BIO 96,878
5 R01 GM27013-03 22400	AULL, JOHN L ISOLATION AND CHARACTERIZATION OF DEUTERATED ENZYMES	AUBURN UNIVERSITY AT AUBURN	AUBURN	81 ALABAMA	02-83	0	44,304	BBCB 62,492
5 R01 GM27083-03 22400	HAMILTON, GORDON A SOME OXIDASE CATALYZED REACTIONS INVOLVING GLYOXYLATE	PENNSYLVANIA STATE UNIVERSITY UNIV PARK	UNIVERSITY PARK	82 PENNSYLVANIA	11-82	0	34,160	BIO 46,098
5 R01 GM27239-03 22400	INGRAHAM, LLOYD L FLAVINS IN HYDROXYLATION AND BIOLUMINESCENCE	UNIVERSITY OF CALIFORNIA DAVIS	DAVIS	82 CALIFORNIA	03-83	0	34,086	BIO 44,653
5 R01 GM27256-03 22400	LEVINE, LAWRENCE PROSTAGLANDIN BIOSYNTHESIS BY CELLS IN CULTURE	BRANDEIS UNIVERSITY	WALTHAM	82 MASSACHUSETTS	11-82	2	66,905	PC 108,045
5 R01 GM27276-03 22400	VAN WART, HAROLD E METALLOENZYME DYNAMICS AND MECHANISM	FLORIDA STATE UNIVERSITY	TALLAHASSEE	82 FLORIDA	12-82	0	33,600	BMT 48,552
5 R01 GM27493-04 22400	CHLEBOWSKI, JAN ASSEMBLY, ACTIVATION AND REGULATION OF ENZYMES	VIRGINIA COMMONWEALTH UNIVERSITY	RICHMOND	82 VIRGINIA	05-83	1	40,614	BBCA 59,986
5 R01 GM27636-03 22400	SELTZER, STANLEY MECHANISM STUDIES OF ENZYMIC CIS-TRANS ISOMERIZATION	ASSOCIATED UNIV-BROOKHAVEN NATL LAB	UPTON	82 NEW YORK	09-83	0	36,815	BIO 58,904
5 R01 GM27639-03 22400	CHURCHICH, JORGE E BRAIN PYRIDOXAL KINASE AND P-PYRIDOXINE OXIDASE	UNIVERSITY OF TENNESSEE KNOXVILLE	KNOXVILLE	82 TENNESSEE	06-83	0	32,938	PB 50,606
5 R01 GM27659-03 22400	DOOLEY, DAVID M AMINE OXIDASES:ACTIVE SITE STRUCTURE AND ROLE OF CU(II)	AMHERST COLLEGE	AMHERST	82 MASSACHUSETTS	06-83	0	35,988	PB 49,808
5 R01 GM27667-03 22400	ABELES, ROBERT H HMG-COA REDUCTASE--INHIBITION AND ACTION	BRANDEIS UNIVERSITY	WALTHAM	82 MASSACHUSETTS	05-83	0	87,850	BIO 122,231
5 R01 GM27695-03 22400	FLEMING, PATRICK J ELECTRON TRANSPORT ENZYMES IN CATECHOLAMINE GRANULES	GEORGETOWN UNIVERSITY	WASHINGTON	82 DIST OF COL	03-83	0	39,626	BIO 54,582
5 R01 GM27700-02 22400	AXELROD, BERNARD IDENTIFICATION OF PHOSPHATE-BINDING SITES IN PROTEINS	PURDUE UNIVERSITY WEST LAFAYETTE	WEST LAFAYETTE	81 INDIANA	09-82	0	53,947	BIO 81,724

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ENZYME CATALYSIS AND REGULATION								
5 R01 GM27742-03	BREWER, JOHN M	UNIVERSITY OF GEORGIA		82	03-83	0		BIO
22400	MECHANISM OF METAL ACTIVATION OF YEAST ENOLASE		ATHENS	GEORGIA			43,264	59,235
5 R01 GM27746-03	KUNG, SHAIN-DOW	UNIVERSITY OF MARYLAND BALT CO CAMPUS		82	03-83	0		BIO
22400	RIBULASE-1,5 BISPHOSPHATE CARBOXYLASE IN VIVO		CATONSVILLE	MARYLAND			36,577	56,430
5 R01 GM27766-03	O'CONNOR, MARY L	UNIVERSITY OF WASHINGTON		82	03-83	0		MBC
22400	A STUDY OF THE REGULATION OF METHANE OXIDATION		SEATTLE	WASHINGTON			36,284	48,279
5 R01 GM27784-02	GRANT, GREGORY A	WASHINGTON UNIVERSITY		82	01-83	1		PC
22400	STRUCTURE AND FUNCTION IN ALLOSTERIC REGULATION		SAINT LOUIS	MISSOURI			45,032	69,800
5 R01 GM27814-02	DE TAR, DELOS F	FLORIDA STATE UNIVERSITY		82	01-83	0		BBCB
22400	QUANTITATIVE PREDICTION OF PROTEIN INTERACTIONS		TALLAHASSEE	FLORIDA			32,952	47,304
5 R01 GM27840-03	OGILVIE, JAMES W	UNIVERSITY OF VIRGINIA CHARLOTTESVILLE		82	09-83	0		BIO
22400	PHOSPHOFRUCTOKINASE: STRUCTURE-FUNCTION RELATIONSHIPS		CHARLOTTESVILLE	VIRGINIA			30,867	44,757
5 R01 GM27887-03	DE MOSS, JOHN A	UNIVERSITY OF TEXAS HLTH SCI CTR HOUSTON		82	04-83	0		GEN
22400	SUBUNIT/DOMAIN INTERACTIONS IN MULTIFUNCTIONAL ENZYMES		HOUSTON	TEXAS			73,963	101,214
5 R01 GM27927-03	BACHOVCHIN, WILLIAM W	TUFTS UNIVERSITY		82	07-83	0		BBCB
22400	NMR STUDIES OF ENZYME MECHANISMS		BOSTON	MASSACHUSETTS			22,798	35,288
5 R01 GM27939-03	VAN WART, HAROLD E	FLORIDA STATE UNIVERSITY		82	03-83	0		BMT
22400	METALLOENZYMES AND CONNECTIVE TISSUE METABOLISM		TALLAHASSEE	FLORIDA			44,010	63,594
5 R01 GM27953-03	LANGERMAN, NEAL R	UTAH STATE UNIVERSITY		82	06-83	0		BBCA
22400	ENERGY STATE OF FLAVOPROTEINS		LOGAN	UTAH			30,256	40,671
5 R01 GM27975-03	SOUTHERLAND, WILLIAM M	HOWARD UNIVERSITY		82	06-83	0		BIO
22400	A STRUCTURAL AND ENZYMIC ANALYSIS OF SULFITE OXIDASES		WASHINGTON	DIST OF COL			36,610	65,898
5 R01 GM28143-03	SCHIRCH, LAVERNE G	VIRGINIA COMMONWEALTH UNIVERSITY		82	06-83	0		PB
22400	PHYSICAL AND STRUCTURAL STUDIES OF HYDROXYMETHYLASES		RICHMOND	VIRGINIA			47,964	70,114
5 R01 GM28144-03	GLASS, DAVID B	EMORY UNIVERSITY		82	06-83	0		PC
22400	SUBSTRATES AND INHIBITORS OF PROTEIN KINASES		ATLANTA	GEORGIA			49,596	74,044
5 R01 GM28164-03	BOND, GUY H	KIRKSVILLE COLLEGE OF OSTEOPATHIC MED		82	08-83	0		PB
22400	CONTROL OF NA, K-ATPASE BY VANADATE, MG, K, NA, & ATP		KIRKSVILLE	MISSOURI			23,249	33,462
5 R01 GM28176-03	JONES, DEAN P	EMORY UNIVERSITY		82	06-83	0		PB
22400	MECHANISMS OF HYPOXIC PATHOLOGY		ATLANTA	GEORGIA			55,708	82,622
5 R01 GM28178-02	CHEUNG, WAI YIU	ST. JUDE CHILDREN'S RESEARCH HOSPITAL		82	08-83	1		BIO
22400	THE ROLE OF CALMODULIN IN PROSTAGLANDIN METABOLISM		MEMPHIS	TENNESSEE			57,807	79,791

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	MOLECULAR BASIS OF DISEASE SECTION									
		ENZYME CATALYSIS AND REGULATION								
5	R01 GM28226-03 22400	JACOBSON, GARY R THE STRUCTURE OF THE D-MANNITOL PERMEASE OF E COLI	BOSTON UNIVERSITY	BOSTON	82	MASSACHUSETTS	06-83	0	34,009	MBC 61,080
5	R01 GM28339-03 22400	FISHER, JED F CHEMICAL MECHANISMS OF REDUCTIVE METABOLISM	UNIVERSITY OF MINNESOTA OF MNPLS-ST PAUL	MINNEAPOLIS	82	MINNESOTA	06-83	0	36,205	PB 50,325
5	R01 GM28345-03 22400	BRADY, DONALD R SOURCE OF REDUCING EQUIVALENTS FOR OXIDATION OF STEROLS	MEMPHIS STATE UNIVERSITY	MEMPHIS	82	TENNESSEE	08-83	0	23,908	PB 32,348
5	R01 GM28368-03 22400	CRAVEN, PATRICIA A HEME-DEPENDENT ACTIVATION OF GUANYLATE CYCLASE	UNIVERSITY OF PITTSBURGH	PITTSBURGH	82	PENNSYLVANIA	08-83	0	51,875	BIO 66,988
5	R01 GM28373-03 22400	SMITH, THOMAS E KINETICS AND CHEMISTRY OF ALLOSTERIC INTERACTIONS	HOWARD UNIVERSITY	WASHINGTON	82	DIST OF COL	03-83	3	63,407	BIO 112,733
5	R01 GM28540-02 22400	KAZARINOFF, MICHAEL N INTRACELLULAR DEGRADATION OF ENZYMES	CORNELL UNIVERSITY ITHACA	ITHACA	82	NEW YORK	11-82	1	34,877	BIO 46,825
5	R01 GM28547-02 22400	SEYBERT, DAVID W CYTOCHROME P-450 CATALYZED STEROID HYDROXYLATIONS	DUQUESNE UNIVERSITY	PITTSBURGH	82	PENNSYLVANIA	11-82	1	39,530	PB 61,660
5	R01 GM28703-02 22400	BOWMAN, BARRY J EUCARYOTIC H+-ATPASES OF PLASMA MEMBRANES AND VACUOLES	UNIVERSITY OF CALIFORNIA SANTA CRUZ	SANTA CRUZ	82	CALIFORNIA	01-83	1	78,672	PB 98,349
5	R01 GM28773-02 22400	COLLINS, KIM D DIHYDROOROTASE: CATALYSIS AND INHIBITION	JOHNS HOPKINS UNIVERSITY	BALTIMORE	82	MARYLAND	01-83	1	48,308	BIO 71,962
5	R01 GM28818-17 22400	GOLDBERG, NELSON D KREBS CYCLE AND CYCLIC NUCLEOTIDE CONTROL	UNIVERSITY OF MINNESOTA OF MNPLS-ST PAUL	MINNEAPOLIS	82	MINNESOTA	07-83	1	146,681	SSS 203,887
5	R01 GM28831-03 22400	GOFF, HAROLD M HIGH OXIDATION STATE IRON PORPHYRINS	UNIVERSITY OF IOWA	IOWA CITY	82	IOWA	07-83	0	31,272	BMT 43,155
5	R01 GM28834-03 22400	MAUK, ARTHUR G CYTOCHROME B5-HEMOGLOBIN REDOX COUPLE	UNIVERSITY OF BRITISH COLUMBIA	VANCOUVER	82	CANADA	08-83	0	29,260	BMT 29,260
5	R01 GM28894-03 22400	GRAFF, GUSTAV PLATELET FUNCTION CONTROL BY REGULATING PHOSPHOLIPASE C	UNIVERSITY OF ILLINOIS MEDICAL CENTER	CHICAGO	82	ILLINOIS	07-83	0	47,384	BIO 74,567
1	R01 GM28978-01A1 22400	HORTON, H ROBERT SULFHYDRYL OXIDASE, GLUTAMYLTRANSFERASE, AND DISULFIDES	NORTH CAROLINA STATE UNIVERSITY RALEIGH	RALEIGH	82	NORTH CAROLINA	08-83	2	49,305	PC 62,227
5	R01 GM29139-02 22400	VILLAFRANCA, JOSEPH J MECHANISTIC STUDIES OF HYDROXYLASES	PENNSYLVANIA STATE UNIVERSITY UNIV PARK	UNIVERSITY PARK	82	PENNSYLVANIA	03-83	1	78,237	BIO 105,574
5	R01 GM29204-02 22400	KOZARICH, JOHN W MECHANISM OF GLYOXALASE I AND LACTATE RACEMASE	YALE UNIVERSITY	NEW HAVEN	82	CONNECTICUT	03-83	1	45,025	PB 70,850

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MOLECULAR BASIS OF DISEASE SECTION											
		ENZYME CATALYSIS AND REGULATION									
5	R01 GM29220-02	MALBON, CRAIG C.	STATE UNIVERSITY NEW YORK	STONY BROOK	82	03-83	1			PC	
	22400	IMMOBILIZED FLUOROGENIC SUBSTRATES FOR PROTEASES		STONY BROOK	NEW YORK			47,351	70,479		
5	R01 GM29238-02	LAW, JOHN H	UNIVERSITY OF ARIZONA		82	01-83	1			PC	
	22400	STUDY OF LIPID METABOLISM		TUCSON	ARIZONA			105,537	150,918		
5	R01 GM29255-03	ROEHRIG, KARLA L	OHIO STATE UNIVERSITY		82	08-83	0			NTH	
	22400	HORMONAL AND DIETARY CONTROL OF ATP CITRATE LYASE		COLUMBUS	OHIO			25,271	33,659		
5	R01 GM29262-03	MILLER, ARNOLD L	UNIVERSITY OF CALIFORNIA SAN DIEGO		82	08-83	0			CBY	
	22400	STUDIES OF LYSOSOMAL GLYCOPROTEINS IN SLIME MOLD		LA JOLLA	CALIFORNIA			62,380	83,028		
1	R01 GM29353-01A1	KLAPPER, MICHAEL H	OHIO STATE UNIVERSITY		82	06-83	2			PB	
	22400	CHYMOTRYPSIN DEACYLATION--AN IN-DEPTH STUDY		COLUMBUS	OHIO			75,634	95,109		
5	R01 GM29415-02	STUMPF, PAUL K	UNIVERSITY OF CALIFORNIA DAVIS		82	08-83	0			PC	
	22400	THE MOLECULAR STRUCTURE OF FATTY ACID SYNTHETASES		DAVIS	CALIFORNIA			57,872	79,169		
5	R01 GM29432-02	RAIJMAN, LUISA J	UNIVERSITY OF SOUTHERN CALIFORNIA		82	07-83	1			BIO	
	22400	THE KINETIC PROPERTIES OF ENZYMES IN SITU		LOS ANGELES	CALIFORNIA			42,448	64,150		
1	R01 GM29433-01A1	EDMONDSON, DALE E	EMORY UNIVERSITY		82	06-83	4			BIO	1
	HL 22400	COVALENT FLAVIN COENZYMES IN FLAVOENZYME CATALYSIS		ATLANTA	GEORGIA			108,066	145,307		
5	R01 GM29500-27	GOTS, JOSEPH S	UNIVERSITY OF PENNSYLVANIA		82	05-83	3			BIO	
	22400	BIOSYNTHESIS AND INTERCONVERSION OF PURINE NUCLEOTIDES		PHILADELPHIA	PENNSYLVANIA			69,842	113,289		
5	R01 GM29569-02	WOOD, HARLAND G	CASE WESTERN RESERVE UNIVERSITY		82	06-83	3			MBC	
	22400	ROLE OF INORGANIC POLYPHOSPHATE IN METABOLISM		CLEVELAND	OHIO			41,315	59,676		
5	R01 GM29595-03	STUBBE, JOANNE	UNIVERSITY OF WISCONSIN MADISON		82	06-83	0			PB	
	22400	MECHANISM AND INHIBITION OF RIBONUCLEOTIDE REDUCTASE		MADISON	WISCONSIN			57,728	78,725		
1	R01 GM29702-01	WILSON, DWIGHT E, JR	RENSSELAER POLYTECHNIC INSTITUTE		82	12-82	0			BIO	
	22400	RNASE DETECTION SYSTEMS		TROY	NEW YORK			6,000	9,600		
1	R01 GM29909-01	GIBSON, DAVID T	UNIVERSITY OF TEXAS AUSTIN		82	11-82	4			MBC	
	AI 22400	MECHANISMS OF ENZYMATIC OXYGEN FIXATION		AUSTIN	TEXAS			88,842	114,323		
1	R01 GM30097-01	WOODARD, RONALD W	UNIVERSITY OF MICHIGAN AT ANN ARBOR		82	01-83	2			BIO	
	22400	STEREOCHEMISTRY OF ACC SYNTHASE AND ACC DEAMINASE		ANN ARBOR	MICHIGAN			53,096	79,104		
1	R01 GM30179-01	SCHULMAN, HOWARD	STANFORD UNIVERSITY		82	01-83	2			PC	
	22400	CALCIUM AND CALMODULIN-DEPENDENT PROTEIN KINASES		STANFORD	CALIFORNIA			72,487	103,170		
1	R01 GM30195-01A1	BELL, J ELLIS	UNIVERSITY OF ROCHESTER		82	06-83	2			PB	
	22400	MECHANISM AND REGULATION OF GLUTAMATE DEHYDROGENASE		ROCHESTER	NEW YORK			50,474	72,232		

TABLE-4 RESEARCH GRANTS ACTIVE AS OF 09-30-82 BY PROGRAM AREA AND GRANT NUMBER

T	GRANT NUMBER / PROG-AREA	INVESTIGATOR / PROJECT TITLE	GRANTEE INSTITUTION	CITY	FY / STATE	END-DATE	FUT-YRS AVAILABLE	IRG / DIRECT	SUB / TOTAL
		MOLECULAR BASIS OF DISEASE SECTION							
		ENZYME CATALYSIS AND REGULATION							
1	R01 GM30217-01 22400	VIOLA, RONALD E METAL ION AND SUBSTRATE SPECIFICITY OF L-ASPARTASE	SOUTHERN ILLINOIS UNIV AT EDWARDSVILLE	EDWARDSVILLE	82 ILLINOIS	03-83	2	48,666	PB 63,276
1	R01 GM30308-01 22400	WILKINSON, KEITH D UBIQUITIN-DEPENDENT PROTEOLYSIS--SPECIFICITY/MECHANISM	EMORY UNIVERSITY	ATLANTA	82 GEORGIA	01-83	4	70,614	PC 92,171
2	R01 GM30327-02 22400	TSAI, MING-DAW STEREOCHEMISTRY OF ENZYME REACTIONS TO PHOSPHOROUS	OHIO STATE UNIVERSITY	COLUMBUS	82 OHIO	06-83	2	52,309	PB 67,593
5	R01 GM30368-02 22400	AYLING, JUNE E OXYGEN ACTIVATION BY PHENYLALANINE HYDROXYLASE	UNIVERSITY OF SOUTH ALABAMA	MOBILE	82 ALABAMA	06-83	2	75,758	BIO 104,059
5	R01 GM30376-02 22400	BEZANILLA, FRANCISCO J ELECTROPHYSIOLOGICAL STUDIES OF VOLTAGE GATED CHANNELS	UNIVERSITY OF CALIFORNIA LOS ANGELES	LOS ANGELES	82 CALIFORNIA	07-83	3	71,610	PHY 95,970
5	R01 GM30380-02 22400	TAI, HSIN-HSIUNG ENZYMES IN PROSTAGLANDIN METABOLISM	UNIVERSITY OF KENTUCKY	LEXINGTON	82 KENTUCKY	08-83	0	37,346	BIO 55,048
1	R01 GM30416-01 22400	STARCHER, BARRY C ELASTIN TURNOVER	UNIVERSITY OF TEXAS AUSTIN	AUSTIN	82 TEXAS	04-83	2	61,292	PBC 81,904
1	R01 GM30428-01 AI 22400	SOKATCH, JOHN R BIOCHEMISTRY AND GENETICS OF LIPOAMIDE DEHYDROGENASE	UNIVERSITY OF OKLAHOMA HLTH SCIENCES CTR	OKLAHOMA CITY	82 OKLAHOMA	06-83	2	54,861	555 71,528
5	R01 GM30432-02 22400	BLAKLEY, RAYMOND ALLOSTERIC REGULATION OF MONOMERIC ENZYMES	ST. JUDE CHILDREN'S RESEARCH HOSPITAL	MEMPHIS	82 TENNESSEE	08-83	1	68,901	BIO 95,566
5	R01 GM30480-02 22400	FREY, PERRY A NUCLEOTIDYL AND PHOSPHOTRANSFERASE STEREOCHEMISTRY	UNIVERSITY OF WISCONSIN MADISON	MADISON	82 WISCONSIN	06-83	3	71,236	PB 99,462
1	R01 GM30482-01 22400	WINGE, DENNIS R METAL CHELATION IN METALLOTHIONEIN	UNIVERSITY OF UTAH	SALT LAKE CITY	82 UTAH	04-83	2	86,816	BMT 119,466
1	R01 GM30509-01 22400	LANDS, WILLIAM E PROSTAGLANDIN SYNTHASE--STRUCTURE AND FUNCTION	UNIVERSITY OF ILLINOIS MEDICAL CENTER	CHICAGO	82 ILLINOIS	04-83	2	53,443	PB 83,906
1	R01 GM30549-01 AI 22400	SILVERMAN, PHILIP ISOLEUCINE AND VALINE SYNTHESIS IN CPX MUTANTS OF E COLI	YESHIVA UNIVERSITY	NEW YORK	82 NEW YORK	04-83	2	64,978	MG 116,318
1	R01 GM30554-01 22400	CHAU, VINCENT MECHANISM OF ENZYME REGULATION BY CALMODULIN	UNIVERSITY OF FLORIDA	GAINESVILLE	82 FLORIDA	06-83	2	55,102	BIO 1 72,244
1	R01 GM30688-01 22400	KEIZER, JOEL E MECHANISTIC NONEQUILIBRIUM THERMODYNAMICS OF METABOLISM	UNIVERSITY OF CALIFORNIA DAVIS	DAVIS	82 CALIFORNIA	06-83	2	33,250	BBCA 45,486
1	R01 GM30729-01 22400	BYNG, GRAHAM S ENZYMIC INTERFACE BETWEEN PRIMARY & SECONDARY METABOLISM	STATE UNIVERSITY NEW YORK BINGHAMTON	BINGHAMTON	82 NEW YORK	04-83	2	41,395	CP 59,558

T	GRANT NUMBER / PROG-AREA	INVESTIGATOR / PROJECT TITLE	GRANTEE INSTITUTION	CITY	STATE	FY	END-DATE	FUT-YRS AVAILABLE DIRECT	IRG SUB DOLLARS TOTAL
MOLECULAR BASIS OF DISEASE SECTION									
		ENZYME CATALYSIS AND REGULATION							
1	R01 GM30868-01	DANIELS, LACY	UNIVERSITY OF IOWA			82	06-83	2	MBC
	22400	CARBON AND ELECTRON TRANSFER IN BACTERIAL METHANOGENESIS		IOWA CITY	IOWA			79,041	97,297
1	R01 GM30884-01	REINHART, GREGORY D	MAYO FOUNDATION			82	07-83	2	BIO 1
	22400	MECHANISM OF ALLOSTERIC INFLUENCE ON ENZYME ACTIVITY		ROCHESTER	MINNESOTA			48,992	62,519
1	R01 GM30885-01	MATTHEWS, ROWENA G	UNIVERSITY OF MICHIGAN AT ANN ARBOR			82	06-83	2	BIO 1
	22400	FOLYLPOLYGLUTAMATES AND FOLATE-DEPENDENT ENZYMES		ANN ARBOR	MICHIGAN			32,700	48,621
1	R01 GM30910-01	ARMSTRONG, RICHARD N	UNIVERSITY OF MARYLAND COLLEGE PK CAMPUS			82	06-83	2	PB
	ES 22400	MECHANISM OF ACTION OF GULUTATHIONE S-TRANSFERASE		COLLEGE PARK	MARYLAND			65,447	87,698
1	R01 GM30911-01	PETTIGREW, DONALD W	TEXAS AGRI AND MECH UNIV COLLEGE STATION			82	08-83	2	PB
	22400	ASSEMBLY AND CATALYSIS IN REGULATORY ENZYMES		COLLEGE STATION	TEXAS			52,527	64,512
1	R01 GM30943-01	ORME-JOHNSON, WILLIAM H	MASSACHUSETTS INSTITUTE OF TECHNOLOGY			82	06-83	3	SSS 1
	AI 22400	ENZYMES AND REGULATORY PROTEINS OF DINITROGEN REDUCTION		CAMBRIDGE	MASSACHUSETTS			161,704	208,723
1	R01 GM30953-01	WATTERSON, DANIEL M	VANDERBILT UNIVERSITY			82	08-83	2	BIO
	22400	CA2+ DEPENDENT PROTEIN PHOSPHORYLATION: MOLECULAR BASIS		NASHVILLE	TENNESSEE			58,897	90,204
1	R01 GM31099-01	LOWENSTEIN, JOHN M	BRANDEIS UNIVERSITY			82	06-83	4	PB
	AM 22400	FUNCTION AND CONTROL OF EXTRAMITOCHONDRIAL B-OXIDATION		WALTHAM	MASSACHUSETTS			86,613	146,662
1	R01 GM31186-01	MARKHAM, GEORGE D	INSTITUTE FOR CANCER RESEARCH			82	06-83	2	BIO 1
	22400	ENZYMATIC MECHANISMS OF SULFUR-NUCLEOSIDE BIOSYNTHESIS		PHILADELPHIA	PENNSYLVANIA			55,284	78,214
1	R01 GM31193-01	SOBERMAN, ROY J	ROBERT BRECK BRIGHAM HOSPITAL			82	06-83	2	BIO 2
	22400	PURIFICATION AND CONTROL OF THE HUMAN 5-LIPOXYGENASE		BOSTON	MASSACHUSETTS			42,190	59,855
1	R01 GM31454-01	TAI, HSIN-HSIUNG	UNIVERSITY OF KENTUCKY			82	04-83	1	BIO
	22400	ENZYMES IN PROSTAGLANDIN METABOLISM		LEXINGTON	KENTUCKY			24,860	34,555
7	R01 GM31672-01	ADES, IBRAHIM Z	UNIVERSITY OF MARYLAND COLLEGE PK CAMPUS			82	03-83	0	BIO
	22400	BIOGENESIS OF CHICK LIVER AMINOLEVULINATE SYNTHETASE		COLLEGE PARK	MARYLAND			25,700	36,928
7	R01 GM31686-01	COOK, PAUL F	TEXAS COLLEGE OF OSTEOPATHIC MEDICINE			82	06-83	2	PB
	22400	KINETIC AND CHEMICAL MECHANISMS OF ENZYMES		FORT WORTH	TEXAS			33,000	39,075
1	R01 GM31704-01	JORNS, MARILYN S	HAHNEMANN MED COL & HOSP OF PHILADELPHIA			82	07-83	2	PB
	22400	FLAVOENZYME MECHANISMS: REDOX AND NON-REDOX REACTIONS		PHILADELPHIA	PENNSYLVANIA			48,455	75,105
1	R01 GM31708-01	STORM, DANIEL R	UNIVERSITY OF WASHINGTON			82	08-83	2	MBC
	22400	CALMODULIN REGULATION OF B PERTUSSIS ADENYLATE CYCLASE		SEATTLE	WASHINGTON			70,979	89,332
1	R01 GM31716-01	MC KENNA, CHARLES E	UNIVERSITY OF SOUTHERN CALIFORNIA			82	06-83	2	SSS
	22400	BIOORGANIC STUDIES OF NITROGENASE		LOS ANGELES	CALIFORNIA			99,710	132,442

TABLE-4 RESEARCH GRANTS ACTIVE AS OF 09-30-82 BY PROGRAM AREA AND GRANT NUMBER

T	GRANT NUMBER / PROG-AREA	INVESTIGATOR / PROJECT TITLE	GRANTEE INSTITUTION	CITY / STATE	FY	END-DATE	FUT-YRS AVAILABLE	IRG DOLLARS DIRECT	SUB DOLLARS TOTAL
MOLECULAR BASIS OF DISEASE SECTION ENZYME CATALYSIS AND REGULATION									
7	R01 GM31733-01 22400	JARRETT, HARRY W STRUCTURE-FUNCTION RELATIONSHIPS INVOLVING CALMODULIN	INDIANA UNIV-PURDUE UNIV AT INDIANAPOLIS	INDIANAPOLIS INDIANA	82	02-83	2	28,707	CTY 37,006
								0	0
								0	0
								13,825,748	20,015,655
								0	0
								13,825,748	20,015,655

**	0	*CENTERS (P50)
**	0	PROGRAM PROJECTS (P01)
**	225	REGULAR PROJECTS (R01)
**	0	ALL OTHERS (P30, P41, R13, R23, R25)
**	225	TOTALS

T	GRANT NUMBER / PROG-AREA	INVESTIGATOR / PROJECT TITLE	GRANTEE INSTITUTION	CITY	FY / STATE	END-DATE	FUT-YRS AVAILABLE	IRG SUB DOLLARS DIRECT	TOTAL
MOLECULAR BASIS OF DISEASE SECTION GLYCOCONJUGATES									
5	R01 GM10374-20	SCHMID, KARL	BOSTON UNIVERSITY		82	11-82	0		PC
	22410	CHEMISTRY OF HUMAN PROTEINS AND GLYCOPROTEINS		BOSTON	MASSACHUSETTS			100,783	153,176
2	R01 GM16389-13	BLUMENFELD, OLGA O	YESHIVA UNIVERSITY		82	12-82	2		CTY
	22410	PROTEINS OF THE CELL MEMBRANE		NEW YORK	NEW YORK			86,106	157,200
2	R01 GM19978-09	GANDER, JOHN E	UNIVERSITY OF MINNESOTA OF MNPLS-ST PAUL		82	08-83	4		MBC
	22410	FUNGAL GLYCOPEPTIDE BIOSYNTHESIS		MINNEAPOLIS	MINNESOTA			76,185	103,102
5	R01 GM21451-08	LENNARZ, WILLIAM J	JOHNS HOPKINS UNIVERSITY		82	05-83	2		PC
	22410	LIPID CARRIERS IN MEMBRANE GLYCOPROTEIN SYNTHESIS		BALTIMORE	MARYLAND			96,177	144,266
5	R01 GM23900-05	TRIMBLE, ROBERT B	NEW YORK STATE DEPARTMENT OF HEALTH		81	08-83	0		PC
	22410	GLYCOPROTEIN BIOSYNTHESIS IN YEAST		ALBANY	NEW YORK			30,676	44,811
5	R01 GM23902-06	LAINE, ROGER A	UNIVERSITY OF KENTUCKY		82	06-83	0		PBC
	22410	CHEMISTRY OF CELL-SURFACE AND RELEASED GLYCOPROTEINS		LEXINGTON	KENTUCKY			79,214	115,813
2	R01 GM24821-04	LENNARZ, WILLIAM J	JOHNS HOPKINS UNIVERSITY		82	03-83	2		PBC
	22410	ENZYMATIC CONVERSION OF PROTEINS TO GLYCOPROTEINS		BALTIMORE	MARYLAND			77,052	105,428
2	R01 GM24862-04	STEVENS, EUGENE S	STATE UNIVERSITY NEW YORK BINGHAMTON		82	03-83	2		BBCA
	22410	CHARACTERIZATION OF BIOPOLYMERS BY VACUUM UV CD		BINGHAMTON	NEW YORK			40,422	57,916
3	R01 GM24862-04S1	STEVENS, EUGENE S	STATE UNIVERSITY NEW YORK BINGHAMTON		82	03-83	0		SSS
	22410	NIGMS SHARED INSTRUMENTATION GRANT		BINGHAMTON	NEW YORK			40,200	40,209
2	R01 GM25364-04	KELLER, RONALD K	UNIVERSITY OF SOUTH FLORIDA		82	11-82	4		PBC
	22410	REGULATION OF GLYCOPROTEIN BIOSYNTHESIS		TAMPA	FLORIDA			47,612	71,894
5	R01 GM25690-04	CHUNG, ALBERT E	UNIVERSITY OF PITTSBURGH		82	12-82	2		CTY
	22410	CHARACTERIZATION BASEMENT MEMBRANE GLYCOPROTEINS		PITTSBURGH	PENNSYLVANIA			66,815	101,559
5	R01 GM26193-03	BE MILLER, JAMES N	SOUTHERN ILLINOIS UNIVERSITY CARBONDALE		81	05-83	0		PBC
	22410	POTENTIAL GLYCOSYLTRANSFERASE INHIBITORS		CARBONDALE	ILLINOIS			45,926	68,261
5	P01 GM26625-04	REINHOLD, VERNON N	HARVARD UNIVERSITY		82	08-83	1		SSS
	22410	GLYCOCONJUGATE STRUCTURAL STUDIES/PROGRAM PROJECT		BOSTON	MASSACHUSETTS			223,858	427,447
5	R01 GM27904-03	PAULSON, JAMES C	UNIVERSITY OF CALIFORNIA LOS ANGELES		82	03-83	0		PC
	22410	MAMMALIAN SIALYLTRANSFERASES		LOS ANGELES	CALIFORNIA			49,308	64,593
5	R01 GM28286-03	HANSON, BARBARA A	UNIVERSITY OF KENTUCKY		82	07-83	0		PC
	22410	MANNAN SYNTHESIS INHIBITION BY INOSITOL STARVATION		LEXINGTON	KENTUCKY			23,365	34,440
5	R01 GM28949-02	CHAMBERS, JAMES P	UNIVERSITY OF TEXAS HLTH SCI CTR HOUSTON		82	03-83	1		PBC
	22410	CHARACTERIZATION OF THE OLIGOSACCHARIDES OF GLUCOSIDASE		HOUSTON	TEXAS			37,279	51,445

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	MOLECULAR BASIS OF DISEASE SECTION GLYCOCONJUGATES							
5	R01 GM29241-03 22410	KANDUTSCH, ANDREW A DOLICHOL SYNTHESIS IN DIFFERENTIATION AND MALIGNANCY	JACKSON LABORATORY	BAR HARBOR	82 MAINE	08-83	0 49,697	CTY 76,183
5	R01 GM29470-17 22410	GOLDSTEIN, IRWIN J PROTEIN-CARBOHYDRATE INTERACTION	UNIVERSITY OF MICHIGAN AT ANN ARBOR	ANN ARBOR	82 MICHIGAN	03-83	3 66,116	ALY 104,463
1	R01 GM29804-01 22410	OLDEN, KENNETH SEGREGATION, PROCESSING & STABILIZATION OF GLYCOPROTEIN	HOWARD UNIVERSITY	WASHINGTON	82 DIST OF COL	12-82	2 103,847	PBC 186,925
5	R01 GM29833-08 22410	WAECHTER, CHARLES J DOLICHOL METABOLISM & MEMBRANE GLYCOPROTEIN BIOSYNTHESIS	UNIVERSITY OF MARYLAND AT BALTIMORE	BALTIMORE	82 MARYLAND	05-83	3 83,778	PC 122,784
5	R01 GM30365-08 22410	HIRSCHBERG, CARLOS B GLYCOSYLATION MECHANISMS OF CELL LIPIDS AND PROTEINS	ST. LOUIS UNIVERSITY	SAINT LOUIS	82 MISSOURI	07-83	3 77,391	MBY 113,087
1	R01 GM30471-01 22410	PLUMMER, T H, JR CHARACTERIZATION OF PEPTIDE: N-GLYCOSIDASES	NEW YORK STATE DEPARTMENT OF HEALTH	ALBANY	82 NEW YORK	04-83	2 34,267	PC 34,267
7	R01 GM30952-01 22410	HORST, MICHAEL N CHITIN BIOSYNTHESIS IN A NON-FUNGAL SYSTEM	MERCER UNIVERSITY MACON	MACON	82 GEORGIA	11-82	2 23,716	PBC 31,263
1	R01 GM31265-01 22410	HERSCOVICS, ANNETTE A MANNOPROTEIN BIOSYNTHESIS IN SACCHAROMYCES CEREVISIAE	MC GILL UNIVERSITY	MONTREAL	82 CANADA	04-83	2 46,094	PBC 46,094
1	R01 GM31698-01 22410	STURMAN, LAWRENCE S CORONAVIRUS GLYCOPROTEINS AND GLYCOSAMINOGLYCANS	NEW YORK STATE DEPARTMENT OF HEALTH	ALBANY	82 NEW YORK	06-83	2 70,424	EVR 93,764
							0	0
							223,858	427,447
							1,452,450	2,122,934
							0	0
							1,676,308	2,550,381

**	0	*CENTERS (P50)
**	1	PROGRAM PROJECTS (P01)
**	24	REGULAR PROJECTS (R01)
**	0	ALL OTHERS (P30, P41, R13, R23, R25)
**	25	TOTALS

T	GRANT NUMBER / PROG-AREA	INVESTIGATOR / PROJECT TITLE	GRANTEE INSTITUTION	CITY	FY / STATE	END-DATE	FUT-YRS AVAILABLE	DOLLARS DIRECT	IRG SUB DOLLARS TOTAL
MOLECULAR BASIS OF DISEASE SECTION BIOENERGETICS									
5	R01 GM05919-24 22450	LEHNINGER, ALBERT L ENERGY-COUPLING PROCESSES IN MITOCHONDRIA	JOHNS HOPKINS UNIVERSITY	BALTIMORE	82 MARYLAND	02-83	1	176,462	BIO 262,993
5	R01 GM11094-20 22450	BOYER, PAUL D BIOLOGICAL ENERGY TRANSDUCING MECHANISMS	UNIVERSITY OF CALIFORNIA LOS ANGELES	LOS ANGELES	82 CALIFORNIA	04-83	2	104,008	BIO 135,320
5	R01 GM11741-16 22450	LOACH, PAUL A STRUCTURE AND FUNCTION OF PHOTOSYNTHETIC MEMBRANES	NORTHWESTERN UNIVERSITY	EVANSTON	82 ILLINOIS	06-83	1	80,750	PB 105,849
5	P01 GM12202-19 22450	WILSON, DAVID F OXIDATIVE PHOSPHORYLATION IN BIOLOGICAL MEMBRANES	UNIVERSITY OF PENNSYLVANIA	PHILADELPHIA	82 PENNSYLVANIA	04-83	0	308,547	SSS 500,653
5	R01 GM12228-19 22450	MAHLER, HENRY R THE BIOSYNTHESIS OF RESPIRATORY ENZYMES	INDIANA UNIVERSITY BLOOMINGTON	BLOOMINGTON	82 INDIANA	03-83	1	110,467	BIO 155,288
5	R01 GM12394-19 22450	BEINERT, HELMUT COMPONENTS AND PATHWAYS IN BIOLOGICAL OXIDATIONS	UNIVERSITY OF WISCONSIN MADISON	MADISON	82 WISCONSIN	08-83	1	107,143	PB 151,924
5	R01 GM13641-16 22450	SANADI, D RAO OXIDATIVE PHOSPHORYLATION IN HEART MITOCHONDRIA	BOSTON BIOMEDICAL RESEARCH INSTITUTE	BOSTON	82 MASSACHUSETTS	06-83	2	115,913	PB 171,341
2	R01 GM14479-17 22450	JAGENDORF, ANDRE T MEMBRANE-ASSOCIATED PHOSPHORYLATION	CORNELL UNIVERSITY ITHACA	ITHACA	82 NEW YORK	08-83	2	79,702	PB 113,124
5	R01 GM16767-14 22450	KING, TSOO E RECONSTITUTION OF MITOCHONDRIAL RESPIRATORY CHAIN	STATE UNIVERSITY OF NEW YORK AT ALBANY	ALBANY	82 NEW YORK	11-82	2	75,538	BIO 108,011
2	R01 GM16974-13 22450	ALLISON, WILLIAM S STRUCTURAL STUDIES ON THE ENERGY TRANSDUCING ATPASE	UNIVERSITY OF CALIFORNIA SAN DIEGO	LA JOLLA	82 CALIFORNIA	05-83	3	81,621	PB 106,304
5	R01 GM18648-11 22450	ERMAN, JAMES E THE MECHANISM OF CYTOCHROME C PEROXIDASE CATALYSIS	NORTHERN ILLINOIS UNIVERSITY	DE KALB	82 ILLINOIS	07-83	0	46,730	BIO 64,575
2	R01 GM19121-11 22450	MARGOLIASH, EMANUEL MITOCHONDRIAL MEMBRANE METABOLIC ROLE OF CYTOCHROME C	NORTHWESTERN UNIVERSITY	EVANSTON	82 ILLINOIS	12-82	4	211,915	PB 272,310
5	R01 GM19595-09 22450	DILLEY, RICHARD A PROTON-MEMBRANE INTERACTIONS IN BIOENERGETICS	PURDUE UNIVERSITY WEST LAFAYETTE	WEST LAFAYETTE	81 INDIANA	02-83	0	42,216	BIO 62,158
5	R01 GM20379-09 22450	TRUMPOWER, BERNARD L STRUCTURE AND FUNCTION OF HEART MEMBRANE PROTEINS	DARTMOUTH COLLEGE	HANOVER	82 NEW HAMPSHIRE	11-82	2	60,146	BIO 89,798
3	R01 GM20379-09S1 22450	TRUMPOWER, BERNARD L STRUCTURE AND FUNCTION OF HEART MEMBRANE PROTEINS	DARTMOUTH COLLEGE	HANOVER	82 NEW HAMPSHIRE	11-82	2	15,086	BIO 22,523
5	R01 GM20571-09 22450	MALKIN, RICHARD IRON-SULFUR PROTEINS AS BOUND ELECTRON CARRIERS	UNIVERSITY OF CALIFORNIA BERKELEY	BERKELEY	82 CALIFORNIA	06-83	0	47,581	PB 65,620

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MOLECULAR BASIS OF DISEASE SECTION									
	BIOENERGETICS								
2	R01 GM21277-07A1 22450	CUSANOVICH, MICHAEL A BIOLOGICAL ELECTRON TRANSFER	UNIVERSITY OF ARIZONA	TUCSON	82 ARIZONA	03-83	4	81,155	SSS 107,056
5	R01 GM21337-08 22450	PALMER, GRAHAM A MOLECULAR MECHANISMS OF BIOLOGICAL REDOX REACTIONS	RICE UNIVERSITY	HOUSTON	82 TEXAS	05-83	1	103,404	BMT 139,998
5	R01 GM21524-08 22450	WILSON, DAVID F REGULATION AND 02 DEPENDENCE OF CELLULAR METABOLISM	UNIVERSITY OF PENNSYLVANIA	PHILADELPHIA	82 PENNSYLVANIA	11-82	2	62,811	BIO 101,688
5	R01 GM21648-08 22450	ROSEN, BARRY P BIOENERGETICS OF MICROBIAL MEMBRANE FUNCTIONS	UNIVERSITY OF MARYLAND AT BALTIMORE	BALTIMORE	82 MARYLAND	06-83	0	51,569	BIO 77,865
5	R01 GM21737-16 22450	PENEFSKY, HARVEY S MITOCHONDRIAL MEMBRANE AND OXIDATIVE PHOSPHORYLATION	PUBLIC HLTH RES INST OF THE CITY OF NY	NEW YORK	82 NEW YORK	12-82	2	93,272	BIO 129,118
5	R01 GM21827-08 22450	SHERMAN, LOUIS A PHOTOSYNTHESIS, MUTANTS AND CLONING IN CYANOBACTERIA	UNIVERSITY OF MISSOURI COLUMBIA	COLUMBIA	82 MISSOURI	04-83	1	69,094	MBC 92,912
5	R01 GM22070-08 22450	FISHER, RONALD R MITOCHONDRIAL PYRIDINE DINUCLEOTIDE TRANSHYDROGENASE	UNIVERSITY OF SOUTH CAROLINA AT COLUMBIA	COLUMBIA	82 SOUTH CAROLINA	07-83	3	82,163	PB 118,091
5	R01 GM22556-07 22450	YASUHOBU, KERRY T CYTOCHROME OXIDASE AND CYTOCHROME P-450 STRUCTURES	UNIVERSITY OF HAWAII AT MANOA	HONOLULU	82 HAWAII	06-83	1	69,668	PB 97,676
5	R01 GM22751-05 22450	LEE, CHUAN-PU SUBCELLULAR RESPIRATORY FUNCTIONS OF CARDIAC MUSCLE	WAYNE STATE UNIVERSITY	DETROIT	81 MICHIGAN	03-83	0	67,113	BIO 98,291
5	R01 GM23006-23 22450	MACKLER, BRUCE STUDIES OF BIOLOGICAL OXIDATIONS	UNIVERSITY OF WASHINGTON	SEATTLE	82 WASHINGTON	08-83	3	92,598	PB 124,081
5	R01 GM23105-07 22450	FILLINGAME, ROBERT H PROTON-TRANSLOCATING SECTOR OF E. COLI ATPASE COMPLEX	UNIVERSITY OF WISCONSIN MADISON	MADISON	82 WISCONSIN	06-83	1	54,661	MBC 76,940
3	R01 GM23105-07S1 22450	FILLINGAME, ROBERT H PROTON-TRANSLOCATING SECTOR OF E. COLI ATPASE COMPLEX	UNIVERSITY OF WISCONSIN MADISON	MADISON	82 WISCONSIN	06-83	1	26,936	MBC 36,922
5	R01 GM23152-05 22450	CROSS, RICHARD L MECHANISM OF ATP SYNTHESIS BY THE RESPIRATORY CHAIN	UPSTATE MEDICAL CENTER	SYRACUSE	81 NEW YORK	06-83	1	50,229	PB 73,284
5	R01 GM23869-06 22450	TIMKOVICH, RUSSELL ENZYMIC REACTIONS OF DISSIMILATORY NITRITE REDUCTASES	ILLINOIS INSTITUTE OF TECHNOLOGY	CHICAGO	82 ILLINOIS	03-83	1	48,080	BIO 77,392
5	R01 GM24195-06 22450	MALONEY, PETER C ION GRADIENTS AND ENERGY COUPLING IN BACTERIA	JOHNS HOPKINS UNIVERSITY	BALTIMORE	82 MARYLAND	07-83	0	73,517	PB 110,276
2	R01 GM24784-06 22450	SCARBOROUGH, GENE A ENERGY TRANSDUCTION IN NEUROSPORA PLASMA MEMBRANES	UNIVERSITY OF NORTH CAROLINA CHAPEL HILL	CHAPEL HILL	82 NORTH CAROLINA	05-83	4	101,937	SSS 132,800

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	MOLECULAR BASIS OF DISEASE SECTION								
	BIOENERGETICS								
5	R01 GM24887-05	HATEFI, YOUSSEF	SCRIPPS CLINIC AND RESEARCH FOUNDATION		82	07-83	3	SSS	
	22450	ELECTRON TRIBUTARIES OF THE RESPIRATORY CHAIN		LA JOLLA	CALIFORNIA		66,840	110,219	
5	R01 GM25052-05	LEIGH, JOHN S, JR	UNIVERSITY OF PENNSYLVANIA		82	03-83	3	BMT	
	22450	SPATIAL ORGANIZATION OF ELECTRON TRANSPORT SYSTEMS		PHILADELPHIA	PENNSYLVANIA		117,614	187,702	
5	R01 GM25250-06	TZAGOLOFF, ALEXANDER A	COLUMBIA UNIVERSITY		82	08-83	0	BIO	
	22450	BIOSYNTHESIS OF CYTOCHROME OXIDASE		NEW YORK	NEW YORK		35,483	60,215	
5	R01 GM25349-05	SENIOR, ALAN E	UNIVERSITY OF ROCHESTER		82	08-83	3	PB	
	22450	STRUCTURE OF THE PROTON-ATPASE		ROCHESTER	NEW YORK		84,449	139,341	
2	R01 GM25480-04	BABCOCK, GERALD T	MICHIGAN STATE UNIVERSITY		82	03-83	2	BMT	
	22450	BIOENERGETIC MECHANISMS IN MULTICENTER ENZYMES		EAST LANSING	MICHIGAN		66,796	91,722	
5	R01 GM25494-05	HALL, CAROLE L	GEORGIA INSTITUTE OF TECHNOLOGY		82	06-83	1	PB	
	22450	FATTY ACYL COA DEHYDROGENASE/ELECTRON TRANS FLAVOPROTEIN		ATLANTA	GEORGIA		51,045	78,570	
5	R01 GM25683-04	MOUDRIANAKIS, EVANGELOS N	JOHNS HOPKINS UNIVERSITY		82	04-83	1	BIO	
	22450	ENZYMOLOGY OF MITOCHONDRIAL ATP SYNTHESIS		BALTIMORE	MARYLAND		59,360	86,565	
5	R01 GM25879-03	XAVIER, ANTONIO V	UNIVERSITY OF MINNESOTA OF MNPLS-ST PAUL		81	09-82	0	BMT	
	22450	STRUCTURE AND FUNCTION OF PROTEINS IN SULFATE REDUCTION		MINNEAPOLIS	MINNESOTA		43,060	59,905	
5	R01 GM25901-03	COTTRELL, STEPHEN F	BROOKLYN COLLEGE		81	08-83	0	MBY	
	22450	MITOCHONDRIAL ASSEMBLY DURING THE YEAST CELL CYCLE		NEW YORK	NEW YORK		28,524	45,610	
5	R01 GM26004-04	LAUFER, DANIEL A	UNIVERSITY OF MASSACHUSETTS BOSTON		82	05-83	1	BBCA	
	22450	CYCLOAMYLOSE COMPLEXES		BOSTON	MASSACHUSETTS		33,079	58,006	
2	R01 GM26098-04	LOACH, PAUL A	NORTHWESTERN UNIVERSITY		82	06-83	4	PB	
	22450	MODEL SYSTEMS FOR ENERGY COUPLING IN MEMBRANES		EVANSTON	ILLINOIS		59,459	79,583	
2	R01 GM26133-04	WARDEN, JOSEPH T	RENSSELAER POLYTECHNIC INSTITUTE		82	08-83	2	BBCA	
	22450	ESR STUDIES OF ELECTRON TRANSPORT IN PHOTOSYSTEM 2		TROY	NEW YORK		78,433	107,684	
5	R01 GM26305-04	CROFTS, ANTONY R	UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN		82	03-83	0	BBCA	
	22450	THE PROTON PUMPS OF PHOTOSYNTHETIC BACTERIA		URBANA	ILLINOIS		75,709	106,962	
2	R01 GM26334-04	WIMMER, MARY J	WEST VIRGINIA UNIVERSITY		82	07-83	2	PB	
	22450	MECHANISMS OF ENERGY-COUPLED ATP SYNTHESIS/HYDROLYSIS		MORGANTOWN	WEST VIRGINIA		53,761	72,831	
5	R01 GM26420-02	JOSHI, SAROJ	BOSTON BIOMEDICAL RESEARCH INSTITUTE		82	03-83	1	PB	
	22450	ATPASE COMPLEX: PURIFICATION AND TOPOLOGY		BOSTON	MASSACHUSETTS		56,618	81,112	
5	R01 GM26764-03	SANADI, D RAO	BOSTON BIOMEDICAL RESEARCH INSTITUTE		81	12-82	0	BIO	
	22450	HYDROGEN ION TRANSLOCATION--VESICLES & PLANAR BILAYERS		BOSTON	MASSACHUSETTS		52,071	76,588	

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MOLECULAR BASIS OF DISEASE SECTION									
BIOENERGETICS									
2	R01 GM26916-04 / 22450	FERGUSON-MILLER, SHELAGH M ORGANIZATION AND CONTROL OF ELECTRON TRANSFER CHAINS	MICHIGAN STATE UNIVERSITY	EAST LANSING	82 MICHIGAN	06-83	4	66,942	PB 90,364
5	R01 GM26924-03 / 22450	PULLMAN, MAYNARD E ROLE OF ATPASE INHIBITOR IN OXIDATIVE PHOSPHORYLATION	PUBLIC HLTH RES INST OF THE CITY OF NY	NEW YORK	82 NEW YORK	11-82	2	59,378	BIO 80,998
5	R01 GM27043-03 / 22450	TEDESCHI, HENRY THE ELECTRICAL PROPERTIES OF TRANSDUCING MEMBRANES	STATE UNIVERSITY OF NEW YORK AT ALBANY	ALBANY	82 NEW YORK	12-82	1	46,586	BIO 65,983
5	R01 GM27065-03 / 22450	STREKAS, THOMAS C REDOX EFFECTS OF AXIAL LIGAND BONDING IN CYTOCHROMES	QUEENS COLLEGE	NEW YORK	82 NEW YORK	11-82	0	39,933	BMT 65,410
5	R01 GM27085-03 / 22450	WEBSTER, DALE A A MODEL FOR COMPLEX ELECTRON TRANSPORT CHAINS	ILLINOIS INSTITUTE OF TECHNOLOGY	CHICAGO	82 ILLINOIS	12-82	1	47,615	BIO 80,082
5	R01 GM27200-03 / 22450	CRONIN, JOHN R NMR OF CHEMICALLY MODIFIED HEART MUSCLE CYTOCHROME C	ARIZONA STATE UNIVERSITY	TEMPE	82 ARIZONA	06-83	0	22,925	BBCB 34,158
5	R01 GM27208-02 / 22450	HAWKRIDGE, FRED M ELECTRON TRANSFER AT SURFACE ELECTRODES	VIRGINIA COMMONWEALTH UNIVERSITY	RICHMOND	81 VIRGINIA	02-83	0	23,973	BMT 36,918
5	R01 GM27308-04 / 22450	CHANCE, BRITTON MECHANISM OF ELECTRON TRANSFER REACTIONS IN MITOCHONDRIA	UNIVERSITY OF PENNSYLVANIA	PHILADELPHIA	82 PENNSYLVANIA	04-83	1	96,074	BBCB 154,343
5	R01 GM27309-04 / 22450	DUTTON, PETER L ELECTRON AND PROTON TRANSLOCATION IN ENERGY CONVERSION	UNIVERSITY OF PENNSYLVANIA	PHILADELPHIA	82 PENNSYLVANIA	04-83	1	93,085	BBCB 153,590
5	R01 GM27382-03 / 22450	SWEENEY, WILLIAM V IRON-SULFUR PROTEINS	HUNTER COLLEGE	NEW YORK	82 NEW YORK	11-82	0	30,636	BMT 49,600
5	R01 GM27498-03 / 22450	VAN DUYNE, RICHARD P A NEW PROBE TECHNIQUE FOR THE STUDY OF PHOTOSYNTHESIS	NORTHWESTERN UNIVERSITY	EVANSTON	82 ILLINOIS	11-82	0	51,946	BMT 61,952
5	R01 GM27750-03 / 22450	SPUDICH, JOHN L FUNCTION OF BACTERIORHODOPSIN IN SENSORY TRANSDUCTION	YESHIVA UNIVERSITY	NEW YORK	82 NEW YORK	03-83	0	46,072	MBC 84,404
5	R01 GM27812-03 / 22450	HATEFI, YOUSSEF MITOCHONDRIAL NADH AND SUCCINATE DEHYDROGENASE	SCRIPPS CLINIC AND RESEARCH FOUNDATION	LA JOLLA	82 CALIFORNIA	03-83	0	44,351	BIO 71,277
5	R01 GM27857-03 / 22450	GUILLORY, RICHARD J MEMBRANE LINKED REACTIONS: COUPLING FACTOR ATPASE	UNIVERSITY OF HAWAII AT MANOA	HONOLULU	82 HAWAII	03-83	1	47,364	BIO 65,510
5	R01 GM28173-03 / 22450	ROTTENBERG, HAGAI MEMBRANE REGULATION OF MITOCHONDRIAL METABOLISM	HAHNEMANN MED COL & HOSP OF PHILADELPHIA	PHILADELPHIA	82 PENNSYLVANIA	06-83	0	62,021	PB 96,133
5	R01 GM28454-02 / 22450	KRULWICH, TERRY A ATP SYNTHESIS AT LOW PROTONMOTIVE FORCES	MOUNT SINAI SCHOOL OF MEDICINE	NEW YORK	82 NEW YORK	08-83	1	65,159	MBC 97,087

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MOLECULAR BASIS OF DISEASE SECTION									
BIOENERGETICS									
5	R01 GM28789-02	DISMUKES, G CHARLES	PRINCETON UNIVERSITY	PRINCETON	82	03-83	1	36,160	BBCA 62,220
	22450	INTERACTION OF COFACTORS IN PHOTOSYNTHETIC ELECTRON TRAN			NEW JERSEY				
5	R01 GM28796-08	WILKINS, RALPH C	NEW MEXICO STATE UNIVERSITY LAS CRUCES	LAS CRUCES	82	04-83	3	47,508	BMT 69,262
	22450	KINETIC STUDIES OF HEMERYTHRIN REACTIONS			NEW MEXICO				
5	R01 GM28799-02	MILLER, KENNETH R	BROWN UNIVERSITY	PROVIDENCE	81	02-83	0	42,984	CTY 66,345
	22450	THE STRUCTURE OF THE PHOTOSYNTHETIC MEMBRANE			RHODE ISLAND				
3	R01 GM28799-02S1	MILLER, KENNETH R	BROWN UNIVERSITY	PROVIDENCE	82	02-83	0	21,242	CTY 34,399
	22450	THE STRUCTURE OF THE PHOTOSYNTHETIC MEMBRANE			RHODE ISLAND				
5	R01 GM28864-02	WEISS, RICHARD L	UNIVERSITY OF CALIFORNIA LOS ANGELES	LOS ANGELES	82	03-83	1	66,520	MBC 87,141
	22450	METABOLIC ORGANIZATION IN NEUROSPORA			CALIFORNIA				
5	R01 GM28999-02	LEMASTERS, JOHN J	UNIVERSITY OF NORTH CAROLINA CHAPEL HILL	CHAPEL HILL	82	03-83	1	37,884	PB 52,886
	22450	RATE CONTROL AND THERMODYNAMICS OF OX PHOS			NORTH CAROLINA				
1	R01 GM29335-01A1	GREEN, TERRENCE R	OREGON HEALTH SCIENCES UNIVERSITY	PORTLAND	82	04-83	2	33,271	SSS 42,007
	22450	ENZYMOLOGY OF SUPEROXIDE PRODUCTION BY HUMAN PMN'S			OREGON				
5	R01 GM29344-02	STANKOVICH, MARIAN T	UNIVERSITY OF MINNESOTA OF MNPLS-ST PAUL	MINNEAPOLIS	82	06-83	1	40,368	PB 56,112
	22450	A SPECTROELECTROCHEMICAL STUDY OF SELECTED FLAVOPROTEINS			MINNESOTA				
1	R01 GM29805-01	SENIOR, ALAN E	UNIVERSITY OF ROCHESTER	ROCHESTER	82	06-83	2	44,681	PB 71,707
	22450	OSCP AND F6--TWO SUBUNITS OF MITOCHONDRIAL ATPASE			NEW YORK				
5	R01 GM29838-02	POYTON, ROBERT O	UNIVERSITY OF COLORADO AT BOULDER	BOULDER	82	06-83	1	43,277	PB 59,468
	22450	STRUCTURE AND ASSEMBLY OF CYTOCHROME WITH OXIDASE			COLORADO				
5	R01 GM30341-02	MC KEEHAN, WALLACE L	W. ALTON JONES CELL SCIENCE CENTER	LAKE PLACID	82	12-82	0	52,009	CBY 90,132
	22450	OXOCARBOXYLIC ACIDS AND NAD PLUS/NADH IN CELL GROWTH			NEW YORK				
1	R01 GM30500-01	NJUS, DAVID L	WAYNE STATE UNIVERSITY	DETROIT	82	08-83	2	30,720	PB 42,882
	22450	OXIDATION-REDUCTION REACTIONS IN CHROMAFFIN GRANULES			MICHIGAN				
1	R01 GM30552-01	SMITH, JERRY C	GEORGIA STATE UNIVERSITY	ATLANTA	82	04-83	2	47,413	PB 66,558
	22450	MOLECULAR PROBES OF CHARGE SEPARATION IN MEMBRANES			GEORGIA				
7	R01 GM30721-01	YU, CHANG-AN	OKLAHOMA STATE UNIVERSITY STILLWATER	STILLWATER	81	02-83	0	90,341	BIO 116,022
	22450	REACTION MECHANISMS OF MYOCARDIAL UBIQUINONE-PROTEINS			OKLAHOMA				
1	R01 GM30975-01	SCOTT, ROBERT A	UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN	URBANA	82	06-83	2	50,150	PB 65,435
	22450	ELECTROSTATIC EFFECTS IN CYTOCHROME C ELECTRON TRANSFER			ILLINOIS				
1	R01 GM31086-01	GARLID, KEITH D	MEDICAL COLLEGE OF OHIO AT TOLEDO	TOLEDO	82	06-83	2	86,830	PB 117,831
	22450	ION TRANSPORT MECHANISMS IN MITOCHONDRIA			OHIO				

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MOLECULAR BASIS OF DISEASE SECTION BIOENERGETICS										
7	R01 GM31756-01 22450	SLIGAR, STEPHEN G HEME PROTEIN REDUCTASES	UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN URBANA	URBANA	ILLINOIS	82	07-83	3	81,263	PB 114,616
									0	0
									308,547	500,653
									5,142,467	7,426,975
									0	0
									5,451,014	7,927,628

**	0	*CENTERS (P50)
**	1	PROGRAM PROJECTS (P01)
**	80	REGULAR PROJECTS (R01)
**	0	ALL OTHERS (P30, P41, R13, R23, R25)
**	81	TOTALS

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MOLECULAR BASIS OF DISEASE SECTION								
		STRUCTURAL STUDIES OF PROTEINS AND RELATED MODEL SYSTEMS						
1 R13	GM00041-01 JF 22500	MEISTER, ALTON TWELFTH INTERNATIONAL CONGRESS OF BIOCHEMISTRY	AMERICAN SOCIETY OF BIOLOGICAL CHEMISTS	BETHESDA	82 MARYLAND	12-82	0 2,000	NSS 2,000
1 R13	GM01611-01 JF 22500	JARDETZKY, OLEG CONFERENCE ON MAGNETIC RESONANCE	STANFORD UNIVERSITY	STANFORD	82 CALIFORNIA	07-83	0 3,000	SRC 3,000
5 R01	GM04725-26 22500	STURTEVANT, JULIAN M PHYSICOCHEMICAL STUDIES OF BIOCHEMICAL REACTIONS	YALE UNIVERSITY	NEW HAVEN	82 CONNECTICUT	11-82	0 61,030	BBCB 93,817
2 R01	GM08710-22 22500	DAYHOFF, MARGARET O COMPUTER STUDY OF SEQUENCES OF AMINO ACIDS IN PROTEINS	NATIONAL BIOMEDICAL RESEARCH FOUNDATION	WASHINGTON	82 DIST OF COL	07-83	1 260,346	SSS 364,472
5 R01	GM08893-19 22500	KUSTIN, KENNETH CHEMICAL KINETICS STUDIED BY RELAXATION SPECTROMETRY	BRANDEIS UNIVERSITY	WALTHAM	82 MASSACHUSETTS	03-83	1 39,960	BMT 64,735
5 R01	GM10831-24 22500	LASKOWSKI, MICHAEL, JR PROTEIN PROTEINASE INHIBITORS	PURDUE UNIVERSITY WEST LAFAYETTE	WEST LAFAYETTE	82 INDIANA	08-83	3 189,117	PC 259,889
5 R01	GM10848-26 22500	GOLDSTEIN, JACOB H NMR SPECTROSCOPY OF BIOLOGICALLY IMPORTANT SYSTEMS	EMORY UNIVERSITY	ATLANTA	82 GEORGIA	08-83	3 71,814	BBCB 106,721
5 R01	GM10880-23 22500	YANG, JEN T OPTICAL ROTATORY POWER OF BIOPOLYMERS	UNIVERSITY OF CALIFORNIA SAN FRANCISCO	SAN FRANCISCO	82 CALIFORNIA	04-83	1 78,600	BBCA 102,687
5 R01	GM11071-20 22500	BRANDTS, JOHN F FREE ENERGY OF FOLDING OF GLOBULAR PROTEINS	UNIVERSITY OF MASSACHUSETTS AMHERST	AMHERST	82 MASSACHUSETTS	06-83	0 60,395	BBCB 86,898
5 R01	GM11223-20 22500	WEBER, GREGORIO PROTEIN CONFIGURATION BY FLUORESCENCE TECHNIQUES	UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN	URBANA	82 ILLINOIS	04-83	0 125,980	BBCA 178,633
5 R01	GM11762-17 22500	STARZAK, MICHAEL E THE EFFECTS OF SALTS ON INTERACTIONS IN AQUEOUS MEDIA	STATE UNIVERSITY NEW YORK BINGHAMTON	BINGHAMTON	81 NEW YORK	12-82	0 35,507	BBCB 51,733
5 R01	GM12159-19 22500	SCHACHMAN, HOWARD K STRUCTURES AND INTERACTIONS OF BIOLOGICAL MACROMOLECULES	UNIVERSITY OF CALIFORNIA BERKELEY	BERKELEY	82 CALIFORNIA	04-83	1 125,600	BBCA 164,536
5 R01	GM12446-18 22500	COHN, MILDRED NMR AND EPR STUDIES OF ENZYME-NUCLEOTIDE INTERACIONS	UNIVERSITY OF PENNSYLVANIA	PHILADELPHIA	81 PENNSYLVANIA	02-83	0 106,888	BBCB 168,695
5 R01	GM12862-17 22500	EYRING, EDWARD M STRUCTURAL STUDIES OF NUCLEOSIDES AND NUCLEOTIDES	UNIVERSITY OF UTAH	SALT LAKE CITY	82 UTAH	11-82	0 52,230	BBCA 75,734
5 R01	GM13191-18 22500	FEHER, GEORGE SPECTROSCOPIC INVESTIGATIONS OF BIOLOGICAL SYSTEMS	UNIVERSITY OF CALIFORNIA SAN DIEGO	LA JOLLA	82 CALIFORNIA	06-83	3 128,580	BBCA 169,650
5 R01	GM13215-17 22500	STELLWAGEN, EARLE C STRUCTURE AND FUNCTION STUDIES OF CYTOCHROME C	UNIVERSITY OF IOWA	IOWA CITY	82 IOWA	11-83	0 36,590	BBCB 50,494

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	MOLECULAR BASIS OF DISEASE SECTION											
		STRUCTURAL STUDIES OF PROTEINS AND RELATED MODEL SYSTEMS										
5	R01 GM13401-17 22500	TELLER, DAVID C ASSOCIATION REACTIONS OF ENZYMES	UNIVERSITY OF WASHINGTON	SEATTLE	WASHINGTON	82	12-82	0	56,620	BBCA		75,475
5	R01 GM13914-18 22500	SCHUMAKER, VERNE N MACROMOLECULES OF CIRCULATORY AND GENETIC IMPORTANCE	UNIVERSITY OF CALIFORNIA LOS ANGELES	LOS ANGELES	CALIFORNIA	82	08-83	3	86,430	BBCB		119,878
5	R01 GM14078-16 22500	TAFT, ROBERT W HYDROGEN BONDING AND IONIC SOLVATION BY NMR AND ICR	UNIVERSITY OF CALIFORNIA IRVINE	IRVINE	CALIFORNIA	82	11-82	0	46,370	BBCB		60,745
2	R01 GM14312-28 22500	SCHERAGA, HAROLD A INTERNAL BONDING IN PROTEINS	CORNELL UNIVERSITY ITHACA	ITHACA	NEW YORK	82	12-82	4	98,600	BBCB		139,344
2	R01 GM14603-16 22500	TIMASHEFF, SERGE N STRUCTURE AND INTERACTIONS OF PROTEINS IN SOLUTION	BRANDEIS UNIVERSITY	WALTHAM	MASSACHUSETTS	82	11-82	4	53,000	BBCA		84,310
5	R01 GM15547-16 22500	PETICOLAS, WARNER L LASER RAMAN SCATTERING FROM BIOLOGICAL MACROMOLECULES	UNIVERSITY OF OREGON	EUGENE	OREGON	82	08-83	0	74,370	BBCB		105,580
5	P01 GM15731-14 22500	WALSH, KENNETH A BIOLOGICAL CONTROL BY LIMITED PROTEOLYSIS	UNIVERSITY OF WASHINGTON	SEATTLE	WASHINGTON	81	11-82	0	282,001	SSS		374,481
3	P01 GM15731-14S1 22500	WALSH, KENNETH A PROTEOLYSIS AND PROCESSING OF PROTEIN STRUCTURES	UNIVERSITY OF WASHINGTON	SEATTLE	WASHINGTON	82	11-82	0	66,750	BIO	1	89,445
5	R01 GM16406-14 22500	DEBRUNNER, PETER G RESONANCE SPECTROSCOPY OF ENZYMES	UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN	URBANA	ILLINOIS	82	12-82	1	72,600	BBCB		102,958
5	R01 GM16449-15 22500	LIPPARD, STEPHEN J LIGAND-BRIDGED BINUCLEAR METAL COMPLEXES AND PROTEINS	COLUMBIA UNIVERSITY	NEW YORK	NEW YORK	82	08-83	0	71,143	SSS		120,033
5	R01 GM16552-14 22500	WAUGH, JOHN S HIGH RESOLUTION NMR IN SOLIDS	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	CAMBRIDGE	MASSACHUSETTS	82	03-83	0	108,340	BBCB		158,175
5	R01 GM17528-25 22500	BRESLOW, ESTHER M INTERACTIONS OF PROTEINS	CORNELL UNIVERSITY MEDICAL CENTER	NEW YORK	NEW YORK	81	12-82	0	79,096	BBCB		122,296
2	R01 GM17855-12 22500	BLOOMFIELD, VICTOR A PHYSICAL CHEMISTRY OF BACTERIAL VIRUSES	UNIVERSITY OF MINNESOTA OF MPLS-ST PAUL	MINNEAPOLIS	MINNESOTA	82	05-83	4	117,880	BBCA		147,393
5	R01 GM18092-09 22500	HOOKER, THOMAS M, JR CONFORMATIONS OF BIOLOGICALLY IMPORTANT MOLECULES	UNIVERSITY OF CALIFORNIA SANTA BARBARA	SANTA BARBARA	CALIFORNIA	81	12-82	0	42,000	BBCA		55,020
5	R01 GM18528-21 22500	KAMEN, MARTIN D MOLECULAR BASIS FOR FUNCTION OF IRON PROTEINS	UNIVERSITY OF CALIFORNIA SAN DIEGO	LA JOLLA	CALIFORNIA	81	11-82	0	88,853	BBCA		115,124
3	R01 GM18528-21S1 22500	MEYER, TERRANCE E MOLECULAR BASIS FOR FUNCTION OF IRON PROTEINS	UNIVERSITY OF CALIFORNIA SAN DIEGO	LA JOLLA	CALIFORNIA	82	11-82	0	21,913	PB		29,166

TABLE-4 RESEARCH GRANTS ACTIVE AS OF 09-30-82 BY PROGRAM AREA AND GRANT NUMBER

T	GRANT NUMBER / PROG-AREA	INVESTIGATOR / PROJECT TITLE	GRANTEE INSTITUTION	CITY	FY / STATE	END-DATE	FUT-YRS AVAILABLE	DOLLARS DIRECT	IRG SUB DOLLARS TOTAL
MOLECULAR BASIS OF DISEASE SECTION									
STRUCTURAL STUDIES OF PROTEINS AND RELATED MODEL SYSTEMS									
2	R01 GM18694-09A1 22500	GOODMAN, MURRAY MODEL SYSTEMS FOR STUDIES OF PEPTIDE CONFORMATIONS	UNIVERSITY OF CALIFORNIA SAN DIEGO	LA JOLLA	82 CALIFORNIA	03-83	2	65,310	BBCA 84,874
5	R01 GM18865-11 22500	LOEHR, THOMAS M LASER RAMAN SPECTROSCOPY OF METALLOPROTEINS	OREGON GRADUATE CTR STUDY AND RESEARCH	BEAVERTON	82 OREGON	04-83	1	78,810	BBCB 119,490
2	R01 GM18894-12 AM 22500	YU, NAI-TENG LASER-EXCITED RAMAN SPECTROSCOPY OF BIOPOLYMERS	GEORGIA INSTITUTE OF TECHNOLOGY	ATLANTA	82 GEORGIA	08-83	4	66,622	BBCB 97,035
5	R01 GM19019-18 22500	BERSOHN, RICHARD BIFUNCTIONAL STUDIES OF PROTEINS	COLUMBIA UNIVERSITY	NEW YORK	81 NEW YORK	10-82	0	48,699	BMT 73,376
5	R01 GM19267-11 22500	KUNTZ, IRWIN D, JR MACROMOLECULAR HYDRATION AND STRUCTURE	UNIVERSITY OF CALIFORNIA SAN FRANCISCO	SAN FRANCISCO	82 CALIFORNIA	01-83	3	41,110	BBCB 53,575
5	R01 GM19301-11 22500	TAYLOR, SUSAN S PROTEIN KINASE: PRIMARY STRUCTURE AND C-AMP INTERACTION	UNIVERSITY OF CALIFORNIA SAN DIEGO	LA JOLLA	82 CALIFORNIA	04-83	3	103,150	PB 134,545
5	R01 GM19511-11 22500	DE MOSS, JOHN A ASSEMBLY OF A MEMBRANE-BOUND MULTI-ENZYME COMPLEX	UNIVERSITY OF TEXAS HLTH SCI CTR HOUSTON	HOUSTON	82 TEXAS	07-83	1	81,108	MBC 110,029
5	R01 GM19907-10 22500	MARKLEY, JOHN L NMR SPECTROSCOPY IN PROTEIN CHEMISTRY	PURDUE UNIVERSITY WEST LAFAYETTE	WEST LAFAYETTE	82 INDIANA	05-83	0	68,295	BBCA 92,092
5	R01 GM19972-13 22500	MC FADDEN, BRUCE A BIOCHEMISTRY OF MEMBRANE AND CATALYTIC PROTEINS	WASHINGTON STATE UNIVERSITY	PULLMAN	82 WASHINGTON	07-83	3	84,163	MBC 120,461
5	R01 GM19988-22 22500	BALDWIN, ROBERT L PHYSICAL STUDIES OF NUCLEIC ACIDS AND PROTEINS	STANFORD UNIVERSITY	STANFORD	82 CALIFORNIA	12-82	0	99,760	BBCA 157,621
5	R01 GM19991-09 22500	VAN HOOK, WILLIAM A GAS-SOLUTION CALORIMETRY-SOLVENT ISOTOPE EFFECTS	UNIVERSITY OF TENNESSEE KNOXVILLE	KNOXVILLE	81 TENNESSEE	01-83	0	37,952	BBCB 53,900
2	R01 GM20064-08 22500	HOLTZER, ALFRED M PROPERTIES OF ALPHA-HELIX-FORMING SUBSTANCES	WASHINGTON UNIVERSITY	SAINT LOUIS	82 MISSOURI	02-83	3	41,670	BBCB 64,589
5	R01 GM20168-10 22500	REDFIELD, ALFRED G STRUCTURAL KINETIC STUDIES BY NUCLEAR MAGNETIC RESONANCE	BRANDEIS UNIVERSITY	WALTHAM	82 MASSACHUSETTS	07-83	3	104,164	BBCA 186,295
2	R01 GM20194-10 22500	CHASTEEN, NORMAN D ANION DEPENDENT PROPERTIES OF TRANSFERRIN	UNIVERSITY OF NEW HAMPSHIRE	DURHAM	82 NEW HAMPSHIRE	06-83	4	67,157	BMT 97,029
5	R01 GM20212-07 22500	TANG, JORDAN J STRUCTURE AND FUNCTION OF MAMMALIAN CATHEPSIN D	OKLAHOMA MEDICAL RESEARCH FOUNDATION	OKLAHOMA CITY	82 OKLAHOMA	11-82	0	42,860	PC 58,405
5	R01 GM20276-09 22500	DJERASSI, CARL MAGNETIC CIRCULAR DICHROISM--PORPHYRINS/HEME PROTEINS	STANFORD UNIVERSITY	STANFORD	82 CALIFORNIA	06-83	0	57,270	BMT 90,487

TABLE-4 RESEARCH GRANTS ACTIVE AS OF 09-30-82 BY PROGRAM AREA AND GRANT NUMBER

MOLECULAR BASIS OF DISEASE SECTION
STRUCTURAL STUDIES OF PROTEINS AND RELATED MODEL SYSTEMS

T	GRANT NUMBER / PROG-AREA	INVESTIGATOR / PROJECT TITLE	GRANTEE INSTITUTION	CITY	FY	STATE	END-DATE	FUT-YRS AVAILABLE	DIRECT	IRG	SUB	TOTAL
2	R01 GM20488-10 22500	MILLETT, FRANCIS S NMR STUDIES OF MEMBRANE BOUND PROTEINS	UNIVERSITY OF ARKANSAS AT FAYETTEVILLE	FAYETTEVILLE	82	ARKANSAS	07-83	2	61,118	BBCB		82,801
2	R01 GM21111-09A1 22500	BALDESCHWIELER, JOHN D PAC STUDY OF PHOSPHOLIPID VESICLE TARGETING IN VIVO	CALIFORNIA INSTITUTE OF TECHNOLOGY	PASADENA	82	CALIFORNIA	11-82	2	84,560	BBCB		125,149
5	R01 GM21156-09 22500	EATON, GARETH R INTERACTION OF SPIN LABELS WITH TRANSITION METALS	UNIVERSITY OF DENVER	DENVER	82	COLORADO	06-83	0	61,360	BBCB		95,095
5	R01 GM21161-08 22500	GUNSALUS, IRWIN C PROTEIN STRUCTURE MODIFICATION AND OXIDATION	UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN	URBANA	82	ILLINOIS	11-82	2	62,413	BIO		88,876
5	R01 GM21314-07 22500	RIGGS, AUSTEN F, II STRUCTURAL BIOCHEMISTRY OF HEMOGLOBINS AND HEMOCYANINS	UNIVERSITY OF TEXAS AUSTIN	AUSTIN	82	TEXAS	06-83	1	54,280	PBC		73,278
5	R01 GM21363-09 22500	BREW, KEITH CHEMICAL STUDIES OF ENZYMES AND PROTEINS	UNIVERSITY OF MIAMI	MIAMI	82	FLORIDA	05-83	2	99,390	BIO		164,987
5	R01 GM21652-08 22500	FERRY, JOHN D VISCOELASTIC PROPERTIES OF BIOLOGICAL MACROMOLECULES	UNIVERSITY OF WISCONSIN MADISON	MADISON	82	WISCONSIN	12-82	1	34,212	BBCB		46,944
5	R01 GM21668-08 22500	HUTCHISON, CLYDE A, JR LOCAL STRUCTURE IN ENZYMES--A NEW APPROACH	UNIVERSITY OF CHICAGO	CHICAGO	82	ILLINOIS	11-82	1	81,748	BBCB		123,556
5	R01 GM21726-07 22500	DUS, KARL M COMPARATIVE STRUCTURAL STUDIES OF P-450 HEMEPROTEINS	ST. LOUIS UNIVERSITY	SAINT LOUIS	82	MISSOURI	03-83	0	52,153	BIO		78,230
2	R01 GM21900-07 22500	MAKINEN, MARVIN W ENZYME COMPLEXES IN CRYSTALS-A NEW APPROACH	UNIVERSITY OF CHICAGO	CHICAGO	82	ILLINOIS	03-83	2	111,240	BBCB		143,297
2	R01 GM22109-07 22500	STELLWAGEN, EARLE C AFFINITY CHROMATOGRAPHY FOR THE DINUCLEOTIDE FOLD	UNIVERSITY OF IOWA	IOWA CITY	82	IOWA	03-83	4	70,830	BBCA		92,805
2	R01 GM22243-07A1 22500	COX, DAVID J SELF-ASSOCIATION REACTIONS OF MACROMOLECULES	KANSAS STATE UNIVERSITY	MANHATTAN	82	KANSAS	07-83	2	43,987	BBCB		55,980
5	R01 GM22261-08 22500	LIGHT, ALBERT BOVINE ENTEROKINASE STRUCTURE AND FUNCTION	PURDUE UNIVERSITY WEST LAFAYETTE	WEST LAFAYETTE	82	INDIANA	04-83	0	50,277	PC		68,263
5	R01 GM22620-06 22500	ALLERHAND, ADAM CARBON-13 NMR STUDIES OF SPECIFIC SITES IN PROTEINS	INDIANA UNIVERSITY BLOOMINGTON	BLOOMINGTON	81	INDIANA	02-83	0	50,618	BBCA		68,911
5	R01 GM22701-07 22500	MUNCK, ECKARD STUDIES OF 02 ACTIVATION BY MOSSBAUER SPECTROSCOPY	UNIVERSITY OF MINNESOTA OF MNPLS-ST PAUL	MINNEAPOLIS	82	MINNESOTA	02-83	3	48,450	BBCB		65,208
2	R01 GM22764-07 22500	MC MILLIN, DAVID R COPPER PROTEINS: ASPECTS OF STRUCTURE AND DYNAMICS	PURDUE UNIVERSITY WEST LAFAYETTE	WEST LAFAYETTE	82	INDIANA	08-83	2	81,890	BMT		103,540

T	GRANT NUMBER / PROG-AREA	INVESTIGATOR / PROJECT TITLE	GRANTEE INSTITUTION	CITY	FY / STATE	END-DATE	FUT-YRS AVAILABLE DIRECT	IRG SUB DOLLARS TOTAL
		MOLECULAR BASIS OF DISEASE SECTION STRUCTURAL STUDIES OF PROTEINS AND RELATED MODEL SYSTEMS						
5	R01 GM22793-07 22500	KREILICK, ROBERT W STRUCTURAL STUDIES OF BIOLOGICAL METAL COMPLEXES	UNIVERSITY OF ROCHESTER	ROCHESTER	82 NEW YORK	03-83	2 79,140	BMT 130,526
5	R01 GM22923-07 22500	HYDE, JAMES S NITROXIDE RADICAL SPIN LABEL METHODS	MEDICAL COLLEGE OF WISCONSIN	MILWAUKEE	82 WISCONSIN	02-83	1 68,100	BBCB 99,698
5	R01 GM22994-07 22500	WOODY, ROBERT W OPTICAL PROPERTIES OF BIOLOGICAL MACROMOLECULES	COLORADO STATE UNIVERSITY	FORT COLLINS	82 COLORADO	11-82	0 61,550	BBCA 82,969
2	R01 GM23039-06 22500	DAVIS, LAWRENCE C DIRECT SCANNING GEL FILTRATION ON INTERACTING SYSTEMS	KANSAS STATE UNIVERSITY	MANHATTAN	82 KANSAS	05-83	2 18,947	BBCA 26,905
2	R01 GM23289-07 22500	GRIFFIN, ROBERT C SOLID STATE NMR STUDIES OF LIPID BILAYER STRUCTURE	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	CAMBRIDGE	82 MASSACHUSETTS	06-83	2 101,136	BBCB 131,874
5	R01 GM23292-06 22500	MOSTELLER, RAYMOND D REGULATION OF PROTEIN DEGRADATION IN ESCHERICHIA COLI	UNIVERSITY OF SOUTHERN CALIFORNIA	LOS ANGELES	82 CALIFORNIA	03-83	0 54,980	MBC 80,271
5	R01 GM23302-06 22500	HALVORSON, HERBERT R RELAXATION KINETICS OF SUBUNIT INTERACTIONS	HENRY FORD HOSPITAL	DETROIT	81 MICHIGAN	01-83	0 52,767	BBCB 78,305
2	R01 GM23303-07 22500	MATTHEWS, CHARLES R REVERSIBLE UNFOLDING OF NATIVE AND MUTANT PROTEINS	PENNSYLVANIA STATE UNIVERSITY UNIV PARK	UNIVERSITY PARK	82 PENNSYLVANIA	06-83	2 76,786	BBCA 97,742
5	R01 GM23395-06 22500	BROWN, THEODORE L NUCLEAR QUADRUPOLE DOUBLE RESONANCE SPECTROSCOPY	UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN	URBANA	82 ILLINOIS	12-83	0 40,228	BBCB 57,285
5	R01 GM23403-06 22500	GRIFFIN, ROBERT G SOLID STATE NMR STUDIES OF PEPTIDES AND PROTEINS	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	CAMBRIDGE	82 MASSACHUSETTS	04-83	1 76,210	BBCB 112,700
5	R01 GM23599-06 22500	HORROCKS, WILLIAM D, JR NEW LANTHANIDE PROBES OF PROTEIN STRUCTURE	PENNSYLVANIA STATE UNIVERSITY UNIV PARK	UNIVERSITY PARK	82 PENNSYLVANIA	12-82	0 54,971	BBCA 74,221
2	R01 GM23817-18 22500	FEENEY, ROBERT E COMPARATIVE BIOCHEMISTRY OF PROTEINS	UNIVERSITY OF CALIFORNIA DAVIS	DAVIS	82 CALIFORNIA	05-83	3 61,900	PC 78,919
5	R01 GM24266-06 22500	OPELLA, STANLEY J NMR STUDIES OF BIOLOGICAL SUPRAMOLECULAR STRUCTURES	UNIVERSITY OF PENNSYLVANIA	PHILADELPHIA	82 PENNSYLVANIA	07-83	0 70,526	BBCB 116,368
2	R01 GM24486-06 HL 22500	ACKERS, GARY K REGULATORY INTERACTIONS IN PROTEIN/NUCLEIC ACID SYSTEMS	JOHNS HOPKINS UNIVERSITY	BALTIMORE	82 MARYLAND	08-83	4 160,822	BBCA 224,757
5	R01 GM24488-03 22500	STAPLETON, HARVEY J ELECTRON SPIN RELAXATION AT ACTIVE SITES IN PROTEINS	UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN	URBANA	81 ILLINOIS	04-83	0 42,041	BMT 55,799
5	R01 GM24527-06 22500	STEINMAN, HOWARD M SUPEROXIDE DISMUTASES: STRUCTURE, FUNCTION, EVOLUTION	YESHIVA UNIVERSITY	NEW YORK	82 NEW YORK	04-83	0 68,310	BIO 126,277

T GRANT NUMBER PROG-AREA	INVESTIGATOR PROJECT TITLE	GRANTEE INSTITUTION	CITY	FY STATE	END-DATE	FUT-YRS AVAILABLE DIRECT	IRG SUB DOLLARS TOTAL
MOLECULAR BASIS OF DISEASE SECTION							
STRUCTURAL STUDIES OF PROTEINS AND RELATED MODEL SYSTEMS							
5 R01 GM24570-05 22500	MATTHEWS, CHARLES R CHEMICAL TRAPPING OF INTERMEDIATES IN PROTEIN FOLDING	PENNSYLVANIA STATE UNIVERSITY UNIV PARK	UNIVERSITY PARK	82 PENNSYLVANIA	12-82	1 30,545	BBCA 40,422
5 R01 GM24602-05 22500	HERMODSON, MARK A AMINO ACID SEQUENCES OF BINDING PROTEINS	PURDUE UNIVERSITY WEST LAFAYETTE	WEST LAFAYETTE	82 INDIANA	03-83	3 78,997	PC 108,996
2 R01 GM24760-04 22500	RUPLEY, JOHN A MACROMOLECULAR SOLVATION	UNIVERSITY OF ARIZONA	TUCSON	82 ARIZONA	11-82	4 59,930	BBCA 84,840
5 R01 GM24813-03 22500	FIAT, DANIEL OXYGEN-17 NMR STUDIES OF PEPTIDE CONFORMATION	UNIVERSITY OF ILLINOIS MEDICAL CENTER	CHICAGO	80 ILLINOIS	11-82	0 49,190	BBCB 79,196
3 R01 GM24813-03S1 22500	FIAT, DANIEL OXYGEN-17 NMR STUDIES OF PEPTIDE CONFORMATION	UNIVERSITY OF ILLINOIS MEDICAL CENTER	CHICAGO	81 ILLINOIS	11-82	0 12,147	BBCB 19,071
5 R01 GM24852-03 22500	GLICKSON, JERRY D NMR TECHNIQUES FOR DELINEATING PEPTIDE CONFORMATIONS	UNIVERSITY OF ALABAMA IN BIRMINGHAM	BIRMINGHAM	81 ALABAMA	11-82	0 42,348	BBCA 57,170
5 R01 GM24893-13 22500	SCHERAGA, HAROLD A MOTION AND PROXIMITY RELATIONS IN POLYPEPTIDES	CORNELL UNIVERSITY ITHACA	ITHACA	82 NEW YORK	03-83	3 78,440	BBCB 118,022
5 R01 GM25018-05 22500	JAMES, THOMAS L NMR RELAXATION STUDIES OF MOTION IN BIOPOLYMERS	UNIVERSITY OF CALIFORNIA SAN FRANCISCO	SAN FRANCISCO	82 CALIFORNIA	03-83	1 53,000	BBCB 68,883
2 R01 GM25158-04A1 22500	SPIRO, THOMAS G RAMAN STUDIES OF FLAVINS AND PYRIDINE COENZYMES	PRINCETON UNIVERSITY	PRINCETON	82 NEW JERSEY	03-83	2 65,550	BBCB 98,542
5 R01 GM25177-05 22500	HOROWITZ, PAUL M STRUCTURE-FUNCTION IN THE ENZYME RHODANESE	UNIVERSITY OF TEXAS HLTH SCI CTR SAN ANT	SAN ANTONIO	82 TEXAS	03-83	1 37,560	BBCA 49,406
5 R01 GM25181-05 22500	POWERS, JAMES C TRITIATION OF PROTEINS AND OTHER BIOMOLECULES	GEORGIA INSTITUTE OF TECHNOLOGY	ATLANTA	82 GEORGIA	03-83	0 62,400	BBCB 96,720
5 R01 GM25219-03 22500	KRISHNA, N RAMA NMR STUDIES OF T AND B CELL DIFFERENTIATING PEPTIDES	UNIVERSITY OF ALABAMA IN BIRMINGHAM	BIRMINGHAM	81 ALABAMA	12-82	0 45,684	BBCB 61,673
2 R01 GM25295-07 22500	VANDERJAGT, DAVID L BILIRUBIN TRANSPORT PROTEINS	UNIVERSITY OF NEW MEXICO ALBUQUERQUE	ALBUQUERQUE	82 NEW MEXICO	11-82	2 73,860	BIO 98,186
2 R01 GM25435-04 22500	CHOTHIA, CYRUS THE THREE-DIMENSIONAL STRUCTURE OF PROTEIN MOLECULES	UNIVERSITY OF LONDON	LONDON	82 UNITED KINGDOM	11-82	2 23,957	BBCB 23,957
5 R01 GM25463-03 22500	HALL, BARRY T PROTEIN FOLDING--THE EFFECT OF SEQUENCE	UNIVERSITY OF TEXAS HLTH SCI CTR HOUSTON	HOUSTON	81 TEXAS	11-82	0 26,683	BBCA 36,823
5 R01 GM25505-05 22500	GRIFFIN, ROBERT G NMR STUDIES OF LIPID ASSOCIATION	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	CAMBRIDGE	82 MASSACHUSETTS	06-83	2 70,540	BBCB 97,825

MOLECULAR BASIS OF DISEASE SECTION
STRUCTURAL STUDIES OF PROTEINS AND RELATED MODEL SYSTEMS

T	GRANT NUMBER / PROG-AREA	INVESTIGATOR / PROJECT TITLE	GRANTEE INSTITUTION	CITY	STATE	FY	END-DATE	FUT-YRS AVAILABLE	DIRECT	IRG / SUB	DOLLARS TOTAL
2	R01 GM25703-04 / 22500	SCHMIDT, PAUL G / ACID PROTEASE STRUCTURE, DYNAMICS AND MECHANISM	OKLAHOMA MEDICAL RESEARCH FOUNDATION	OKLAHOMA CITY	OKLAHOMA	82	11-82	2	44,380	BBCB	60,908
5	R01 GM25766-22 / 22500	HILL, ROBERT L / STRUCTURE AND FUNCTION OF PROTEINS	DUKE UNIVERSITY	DURHAM	NORTH CAROLINA	82	08-83	0	161,831	PC	241,247
5	R01 GM25877-04 / 22500	SUDMEIER, JAMES L / STUDIES OF ZINC AND CALCIUM METALLOPROTEINS	UNIVERSITY OF CALIFORNIA RIVERSIDE	RIVERSIDE	CALIFORNIA	82	03-83	1	47,840	BMT	61,224
2	R01 GM25975-04 / 22500	GERIG, JOHN T / STRUCTURAL STUDIES OF PROTEINS BY FLUORINE NMR	UNIVERSITY OF CALIFORNIA SANTA BARBARA	SANTA BARBARA	CALIFORNIA	82	08-83	2	76,513	BBCB	98,425
2	R01 GM26050-03 / 22500	MACCOLL, ROBERT J / STRUCTURE AND FUNCTION OF PHOTOSYNTHETIC PIGMENTS	NEW YORK STATE DEPARTMENT OF HEALTH	ALBANY	NEW YORK	82	03-83	2	29,640	BBCA	44,636
5	R01 GM26071-04 / 22500	KOPPLE, KENNETH D / INFLUENCE OF SOLVATION ON PEPTIDE CONFORMATION	ILLINOIS INSTITUTE OF TECHNOLOGY	CHICAGO	ILLINOIS	82	04-83	1	98,940	BBCB	156,625
5	R01 GM26078-03 / 22500	MUKERJEE, PASUPATI / MICROENVIRONMENTAL STUDIES ON PHOSPHOLIPID SYSTEMS	UNIVERSITY OF WISCONSIN MADISON	MADISON	WISCONSIN	81	12-82	0	22,653	BBCA	32,394
2	R01 GM26242-04 / 22500	WOODWARD, CLARE K / SINGLE PROTON EXCHANGE KINETICS IN PROTEINS	UNIVERSITY OF MINNESOTA OF MNPLS-ST PAUL	MINNEAPOLIS	MINNESOTA	82	03-83	2	48,220	BBCA	65,579
2	R01 GM26566-03A1 / 22500	EATON, GARETH R / BROADENING REAGENTS FOR NITROXYL SPIN PROBES	UNIVERSITY OF DENVER	DENVER	COLORADO	82	08-83	2	40,555	BMT	57,298
2	R01 GM26715-04 / 22500	SNYDER, GRAYSON H / STRATEGIES FOR DIRECTING DISULFIDE PAIRING IN PROTEINS	STATE UNIVERSITY OF NEW YORK AT BUFFALO	BUFFALO	NEW YORK	82	06-83	2	68,938	BBCA	85,733
5	R01 GM26981-04 / 22500	HUDSON, BRUCE S / RESONANCE ENHANCED SPECTROSCOPY	UNIVERSITY OF OREGON	EUGENE	OREGON	82	12-82	0	41,455	BBCB	55,046
5	R01 GM27036-03 / 22500	BRYAN, WILLIAM P / THE ROLE OF WATER IN PROTEIN STRUCTURE AND FUNCTION	INDIANA UNIV-PURDUE UNIV AT INDIANAPOLIS	INDIANAPOLIS	INDIANA	82	03-83	0	36,510	BBCA	52,574
5	R01 GM27350-03 / 22500	LOVE, L J CLINE / CHARGE TRANSFER COMPLEXES IN INVERTED MICELLES	SETON HALL UNIVERSITY	SOUTH ORANGE	NEW JERSEY	82	08-83	0	8,844	BBCA	13,116
5	R01 GM27357-03 / 22500	PRASAD, PARAS N / REACTION DYNAMICS OF SOLIDS OF BIOLOGICAL INTEREST	STATE UNIVERSITY OF NEW YORK AT BUFFALO	BUFFALO	NEW YORK	82	12-82	0	29,220	BBCA	43,469
5	R01 GM27721-02 / 22500	AMMA, ELMER L / 113CD NMR AND CRYSTALLOGRAPHY OF ZN2+, CA2+ ENZYMES	UNIVERSITY OF SOUTH CAROLINA AT COLUMBIA	COLUMBIA	SOUTH CAROLINA	82	01-83	1	41,320	BMT	52,606
5	R01 GM27738-03 / 22500	BOXER, STEVEN G / BIOMOLECULAR STRUCTURE/DYNAMICS--NUCLEAR POLARIZATION	STANFORD UNIVERSITY	STANFORD	CALIFORNIA	82	07-83	0	36,116	BBCA	57,063

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	MOLECULAR BASIS OF DISEASE SECTION								
		STRUCTURAL STUDIES OF PROTEINS AND RELATED MODEL SYSTEMS							
5	R01 GM27825-03 22500	FLEMING, GRAHAM R TIME RESOLVED STUDIES OF PROTEIN DYNAMICS	UNIVERSITY OF CHICAGO	CHICAGO	82 ILLINOIS	03-83	0	46,455	BBCA 72,934
2	R01 GM28139-03 22500	LEE, JOHN W STRUCTURE AND INTERACTIONS OF LUMAZINE PROTEIN	UNIVERSITY OF GEORGIA	ATHENS	82 GEORGIA	11-82	2	50,540	BBCA 69,594
5	R01 GM28166-03 22500	DARNALL, DENNIS W SPECTROSCOPIC RULERS AS PROBES OF HUMAN SERUM ALBUMIN	NEW MEXICO STATE UNIVERSITY LAS CRUCES	LAS CRUCES	82 NEW MEXICO	07-83	0	38,952	BBCA 61,934
5	R01 GM28190-03 22500	SCHUSTER, GARY B PROTON TRANSFER REACTIONS AND PROTON MOBILITY IN WATER	UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN	URBANA	82 ILLINOIS	06-83	0	30,250	BBCA 43,076
5	R01 GM28222-03 22500	VALENTINE, JOAN S THE HISTIDYL IMIDAZOLE LIGAND IN METALLOPROTEINS	UNIVERSITY OF CALIFORNIA LOS ANGELES	LOS ANGELES	82 CALIFORNIA	12-82	1	65,080	BBCA 85,255
5	R01 GM28358-04 22500	ORME-JOHNSON, WILLIAM, III STRUCTURES & MECHANISMS OF ELECTRON TRANSFER ENZYMES	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	CAMBRIDGE	82 MASSACHUSETTS	06-83	1	81,690	BBCB 121,443
5	R01 GM28386-02 22500	STEPHENS, PHILIP J CHIROPTICAL SPECTROSCOPY OF METALLOPROTEINS	UNIVERSITY OF SOUTHERN CALIFORNIA	LOS ANGELES	82 CALIFORNIA	01-83	3	55,250	BBCA 78,549
5	R01 GM28410-02 22500	RIGGS, AUSTEN F, II STRUCTURE OF HEMOCYANIN	UNIVERSITY OF TEXAS AUSTIN	AUSTIN	82 TEXAS	12-82	3	50,460	PB 68,121
5	R01 GM28534-02 22500	RHA, CHOKYUN PROTEIN-PROTEIN INTERACTIONS: RHEOLOGICAL ASSESSMENT	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	CAMBRIDGE	82 MASSACHUSETTS	01-83	1	41,560	BBCB 60,393
5	R01 GM28611-02 22500	DESIDERIO, DOMINIC M COLLISION ACTIVATION-FD MASS SPECTROMETRY OF PEPTIDES	UNIVERSITY OF TENN CENTER HEALTH SCIEN	MEMPHIS	82 TENNESSEE	01-83	1	29,940	SSS 41,916
1	R01 GM28619-01A1 22500	DIEM, MAX NOVEL PROBES FOR SOLUTION CONFORMATION OF PEPTIDES	HUNTER COLLEGE	NEW YORK	82 NEW YORK	01-83	2	65,700	BBCA 85,013
5	R01 GM28731-02 22500	HENSLEY, PRESTON QUATERNARY INTERACTIONS IN A MULTIENZYME COMPLEX	GEORGETOWN UNIVERSITY	WASHINGTON	82 DIST OF COL	11-82	1	28,280	BBCA 39,650
5	R01 GM28793-31 22500	CANN, JOHN R PHYSICOCHEMISTRY AND IMMUNOLOGY OF MACROMOLECULES	UNIVERSITY OF COLORADO HLTH SCIENCES CTR	DENVER	82 COLORADO	05-83	3	96,150	BBCA 119,707
5	R01 GM28928-02 22500	JOHNSON, MICHAEL L ANALYSIS OF MODELS OF HEMOGLOBIN ACTION	UNIVERSITY OF VIRGINIA CHARLOTTESVILLE	CHARLOTTESVILLE	82 VIRGINIA	12-82	1	24,346	EH 35,302
1	R01 GM28994-01A1 22500	RAPOPORT, HENRY STRUCTURE OF PROTEIN-BOUND BILE PIGMENTS	UNIVERSITY OF CALIFORNIA BERKELEY	BERKELEY	82 CALIFORNIA	04-83	4	84,530	BIO 110,734
5	R01 GM29007-02 22500	SHIVELY, JOHN E MICROSEQUENCING AND MOLECULAR CLONING OF FIBRONECTINS	CITY OF HOPE NATIONAL MEDICAL CENTER	DUARTE	82 CALIFORNIA	08-83	1	78,563	PBC 112,974

T	GRANT NUMBER / PROG-AREA	INVESTIGATOR / PROJECT TITLE	GRANTEE INSTITUTION	CITY	FY / STATE	END-DATE	FUT-YRS AVAILABLE	DIRECT	IRG SUB DOLLARS TOTAL
MOLECULAR BASIS OF DISEASE SECTION									
		STRUCTURAL STUDIES OF PROTEINS AND RELATED MODEL SYSTEMS							
5	R01 GM29025-02 22500	GREENBERG, G ROBERT ROLE OF RIBONUCLEOTIDE REDUCTASE IN DNA REPLICATION	UNIVERSITY OF MICHIGAN AT ANN ARBOR	ANN ARBOR	82 MICHIGAN	03-83	3	60,240	MG 93,750
5	R01 GM29039-02 22500	KUROSKY, ALEXANDER HUMAN FIBRONECTIN: STRUCTURE AND FUNCTION	UNIVERSITY OF TEXAS MED BR GALVESTON	GALVESTON	82 TEXAS	03-83	3	67,410	PBC 90,330
1	R01 GM29041-01A1 22500	TSAI, MING-DAW 17 O AND 31P NMR OF BIOPHOSPHATES	OHIO STATE UNIVERSITY	COLUMBUS	82 OHIO	07-83	2	49,597	BMT 67,282
1	R01 GM29072-01A1 22500	KOLLMAN, PETER A MODELING PROTEIN - SMALL MOLECULE INTERACTIONS	UNIVERSITY OF CALIFORNIA SAN FRANCISCO	SAN FRANCISCO	82 CALIFORNIA	01-83	2	50,470	BBCA 65,283
5	R01 GM29078-02 22500	KUPKE, DONALD W CALMODULIN-CA++-MG++ INTERACTIONS: VOLUME PROPERTIES	UNIVERSITY OF VIRGINIA CHARLOTTESVILLE	CHARLOTTESVILLE	82 VIRGINIA	03-83	0	40,920	BBCA 58,670
5	R01 GM29242-02 22500	MARSHALL, JAMES J SYNTHETIC CARBOHYDRATE-PROTEIN CONJUGATES	UNIVERSITY OF NOTRE DAME	NOTRE DAME	81 INDIANA	09-82	0	60,544	PC 92,632
1	R01 GM29375-01 22500	POLAVARAPU, PRASAD L VIBRATIONAL CIRCULAR DICHROISM STUDIES	VANDERBILT UNIVERSITY	NASHVILLE	82 TENNESSEE	01-83	2	84,390	BBCA 95,503
1	R01 GM29378-01 22500	KEGELES, GERSON RAPID KINETICS OF AGGREGATING SYSTEMS	UNIVERSITY OF CONNECTICUT STORRS	STORRS	81 CONNECTICUT	12-82	0	37,095	BBCB 55,240
5	R01 GM29428-02 22500	BRYANT, ROBERT G BIOPHYSICAL DYNAMICS: MAGNETIC RESONANCE APPROACHES	UNIVERSITY OF MINNESOTA OF MNPLS-ST PAUL	MINNEAPOLIS	82 MINNESOTA	06-83	3	76,480	BBCB 105,371
5	R01 GM29458-02 22500	ROSE, GEORGE D HIERARCHIC SELF-ASSEMBLY IN GLOBULAR PROTEINS	PENNSYLVANIA STATE UNIV HERSHEY MED CTR	HERSHEY	82 PENNSYLVANIA	11-82	0	23,720	BBCA 30,554
1	R01 GM29583-01A1 ES 22500	PETERING, DAVID H STRUCTURE AND REACTIVITY OF METALLOTHIONINES	UNIVERSITY OF WISCONSIN MILWAUKEE	MILWAUKEE	82 WISCONSIN	03-83	2	90,260	TOX 120,472
1	R01 GM29754-01 22500	OPELLA, STANLEY J SOLID STATE NMR OF PEPTIDES	UNIVERSITY OF PENNSYLVANIA	PHILADELPHIA	82 PENNSYLVANIA	12-82	2	49,740	BBCB 63,871
1	R01 GM29984-01 22500	MICHL, JOSEF PHOTORESOLUTION AND RACEMIZATION KINETICS OF CONFORMERS	UNIVERSITY OF UTAH	SALT LAKE CITY	82 UTAH	01-83	1	30,490	BBCA 42,636
1	R01 GM29985-01 22500	TRUE, NANCY S ROTATIONAL POTENTIAL FUNCTIONS OF AMIDES	UNIVERSITY OF CALIFORNIA DAVIS	DAVIS	82 CALIFORNIA	01-83	2	27,530	BBCA 35,134
1	R01 GM30017-01 22500	FORSTER, LESLIE S PROTEIN FLUCTUATIONS AND FLUORESCENCE QUENCHING	UNIVERSITY OF ARIZONA	TUCSON	82 ARIZONA	03-83	2	22,070	BBCA 31,560
1	R01 GM30114-01 22500	SEGAL, GERALD A CIRCULAR DICHROISM SPECTRA IN THE VACUUM ULTRAVIOLET	UNIVERSITY OF SOUTHERN CALIFORNIA	LOS ANGELES	82 CALIFORNIA	03-83	2	37,360	BBCA 54,546

TABLE-4 RESEARCH GRANTS ACTIVE AS OF 09-30-82 BY PROGRAM AREA AND GRANT NUMBER

T	GRANT NUMBER / PROG-AREA	INVESTIGATOR / PROJECT TITLE	GRANTEE INSTITUTION	CITY	STATE	FY	END-DATE	FUT-YRS	AVAILABLE DIRECT	IRG SUB DOLLARS TOTAL
MOLECULAR BASIS OF DISEASE SECTION										
		STRUCTURAL STUDIES OF PROTEINS AND RELATED MODEL SYSTEMS								
1	R01 GM30147-01 22500	KEIDERLING, TIMOTHY A VIBRATIONAL OPTICAL ACTIVITY: BIOCHEMICAL APPLICATIONS	UNIVERSITY OF ILLINOIS CHICAGO CIRCLE	CHICAGO	ILLINOIS	82	01-83	2	42,740	BBCA 61,544
1	R01 GM30174-01 22500	LANYI, JANOS TIME-RESOLVED INFRARED SPECTROSCOPY OF BACTERIORHODOPSIN	UNIVERSITY OF CALIFORNIA IRVINE	IRVINE	CALIFORNIA	82	07-83	2	82,728	BBCA 102,371
1	R01 GM30178-01A1 22500	PRENDERGAST, FRANKLIN G BIOCHEMISTRY OF BIOLUMINESCENCE IN AEQUORIN	MAYO FOUNDATION	ROCHESTER	MINNESOTA	82	06-83	2	43,850	PB 51,642
7	R01 GM30425-01 22500	SILVER, FREDERICK H COLLAGEN FIBRILLOGENESIS--MOLECULAR AND CELLULAR STEPS	RUTGERS MEDICAL SCHOOL	PISCATAWAY	NEW JERSEY	81	02-83	0	20,399	PBC 33,760
1	R13 GM30508-01 22500	HUDSON, BRUCE S THE 1982 BIOPOLYMERS GORDON CONFERENCE	GORDON RESEARCH CONFERENCES	KINGSTON	RHODE ISLAND	82	05-83	0	2,000	BBCB 2,000
1	R01 GM30556-01 22500	BROWN, LARRY R STRUCTURE & DYNAMICS OF PROTEIN-LIPID COMPLEXES BY NMR	MICHIGAN MOLECULAR INSTITUTE	MIDLAND	MICHIGAN	82	04-83	2	49,818	BBCB 86,202
1	R01 GM30560-01 22500	GROSS, ELIZABETH L CHEMICAL MODIFICATION OF PLASTOCYANIN	OHIO STATE UNIVERSITY	COLUMBUS	OHIO	82	04-83	2	56,580	BBCA 73,452
1	R01 GM30561-01 22500	CRIPPEN, GORDON M CONFORMATIONAL ANALYSIS BY ENERGY EMBEDDING	TEXAS AGRI AND MECH UNIV	COLLEGE STATION COLLEGE STATION	TEXAS	82	04-83	2	41,250	BBCA 53,213
1	R01 GM30580-01 22500	LEVY, RONALD M NMR RELAXATION AND DYNAMICS OF PEPTIDES AND PROTEINS	RUTGERS THE STATE UNIV NEW BRUNSWICK	NEW BRUNSWICK	NEW JERSEY	82	05-83	2	36,364	BBCB 57,455
1	R01 GM30900-01 22500	NOZAKI, YASUHIKO DETERMINATION OF THE CONCENTRATION OF BIOPOLYMERS	DUKE UNIVERSITY	DURHAM	NORTH CAROLINA	82	06-83	1	49,853	BBCA 71,797
1	R01 GM30904-01 22500	SIIMAN, OLAVI SURFACE-ENHANCED RAMAN SCATTERING	CLARKSON COLLEGE OF TECHNOLOGY	POTSDAM	NEW YORK	82	06-83	2	35,894	BMT 51,780
1	R01 GM31145-01 22500	WEISS, RICHARD L 15N-NUCLEAR MAGNETIC RESONANCE IN BIOLOGY	UNIVERSITY OF CALIFORNIA LOS ANGELES	LOS ANGELES	CALIFORNIA	82	06-83	2	58,053	PB 79,359
1	R01 GM31241-01 22500	PRENDERGAST, FRANKLYN G BIOPHYSICAL MECHANISMS IN MELITTIN INDUCED CYTOLYSIS	MAYO FOUNDATION	ROCHESTER	MINNESOTA	82	06-83	2	59,038	BBCB 75,677
7	R01 GM31305-01 22500	WOLD, FINN PROTEIN STRUCTURE AND FUNCTION	UNIVERSITY OF TEXAS HLTH SCI CTR HOUSTON	HOUSTON	TEXAS	82	11-82	1	52,389	BIO 72,297
								0	348,751	0 463,926
									9,562,816	13,517,183
									7,000	7,000
									9,918,567	13,988,109

**	0	*CENTERS (P50)
**	2	PROGRAM PROJECTS (P01)
**	153	REGULAR PROJECTS (R01)
**	3	ALL OTHERS (P30, P41, R13, R23, R25)
**	158	TOTALS

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MOLECULAR BASIS OF DISEASE SECTION									
		DIFFRACTION ANALYSIS OF PROTEINS AND RELATED MODEL SYSTEMS							
5	R01 GM06920-24	LIPSCOMB, WILLIAM N	HARVARD UNIVERSITY		82	08-83	2		BBCA
	22550	STRUCTURE & FUNCTION OF BIOLOGICALLY ACTIVE MOLECULES		CAMBRIDGE	MASSACHUSETTS			224,830	331,102
5	R01 GM10704-20	ROSSMANN, MICHAEL G	PURDUE UNIVERSITY WEST LAFAYETTE		82	05-83	0		BBCB
	22550	STRUCTURAL STUDIES OF PROTEIN SUBUNITS		WEST LAFAYETTE	INDIANA			103,955	145,537
2	R01 GM10828-27	JENSEN, LYLE H	UNIVERSITY OF WASHINGTON		82	03-83	2		BBCA
	22550	STRUCTURE OF BIOLOGICALLY IMPORTANT COMPOUNDS		SEATTLE	WASHINGTON			76,870	97,047
2	R01 GM10928-20	KRAUT, JOSEPH	UNIVERSITY OF CALIFORNIA SAN DIEGO		82	12-82	4		BBCB
	22550	CRYSTALLOGRAPHIC STUDY OF BIOLOGICAL MOLECULES		LA JOLLA	CALIFORNIA			109,250	142,270
5	R01 GM13366-18	JENSEN, LYLE H	UNIVERSITY OF WASHINGTON		82	07-83	0		BBCB
	22550	CRYSTALLOGRAPHIC STUDY OF PROTEINS		SEATTLE	WASHINGTON			79,230	105,862
2	R01 GM13925-17	BANASZAK, LEONARD J	WASHINGTON UNIVERSITY		82	07-83	2		BBCB
	22550	STRUCTURAL STUDIES OF DEHYDROGENASES AND LIPOPROTEINS		SAINT LOUIS	MISSOURI			129,330	181,762
5	R01 GM15000-13	RICHARDSON, DAVID C	DUKE UNIVERSITY		82	05-83	1		BBCB
	22550	CRYSTALLOGRAPHIC ANALYSIS OF PROTEIN STRUCTURES		DURHAM	NORTH CAROLINA			113,460	168,540
5	R01 GM16429-15	LUDWIG, MARTHA L	UNIVERSITY OF MICHIGAN AT ANN ARBOR		82	08-83	3		BBCB
	22550	ENZYMES IN THE CRYSTALLINE STATE: STRUCTURE AND ACTIVITY		ANN ARBOR	MICHIGAN			112,440	177,655
5	R01 GM16925-14	EISENBERG, DAVID S	UNIVERSITY OF CALIFORNIA LOS ANGELES		82	04-83	1		BBCB
	22550	STRUCTURE AND ACTION OF MULTISUBUNIT ENZYMES		LOS ANGELES	CALIFORNIA			135,820	176,839
2	R01 GM16966-13	MARSH, RICHARD E	CALIFORNIA INSTITUTE OF TECHNOLOGY		82	01-83	2		BBCA
	22550	CRYSTAL STRUCTURE STUDIES		PASADENA	CALIFORNIA			50,330	74,488
5	R01 GM19455-11	COTTON, F ALBERT	TEXAS AGRI AND MECH UNIV COLLEGE STATION		82	07-83	0		BBCB
	22550	STRUCTURE/FUNCTION STUDIES ON PROTEINS AND ENZYMES		COLLEGE STATION	TEXAS			66,840	86,224
5	R01 GM20066-10	MATTHEWS, BRIAN W	UNIVERSITY OF OREGON		82	12-82	1		BBCB
	22550	X-RAY STRUCTURAL STUDIES OF PROTEINS		EUGENE	OREGON			69,290	93,738
5	R01 GM20530-10	MATHEWS, F SCOTT	WASHINGTON UNIVERSITY		82	07-83	1		BBCB
	22550	STRUCTURAL STUDIES OF CYTOCHROMES B562 AND B2		SAINT LOUIS	MISSOURI			77,840	120,652
2	R01 GM20568-06	VOET, DONALD H	UNIVERSITY OF PENNSYLVANIA		82	03-83	2		BBCB
	22550	THE X-RAY STRUCTURE OF YEAST PYROPHOSPHATASE		PHILADELPHIA	PENNSYLVANIA			65,330	106,495
2	R01 GM20611-06	DONOHUE, JERRY	UNIVERSITY OF PENNSYLVANIA		82	11-82	2		BBCA
	22550	STRUCTURAL STUDIES: CONFORMATIONS AND HYDROGEN BONDS		PHILADELPHIA	PENNSYLVANIA			24,510	40,442
5	R01 GM20682-09	ARNOTT, STRUTHER	PURDUE UNIVERSITY WEST LAFAYETTE		82	05-83	0		BBCB
	22550	GLYCOSAMINOGLYCAN AND PROTEOGLYCAN STRUCTURES		WEST LAFAYETTE	INDIANA			72,337	100,872

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		MOLECULAR BASIS OF DISEASE SECTION							
		DIFFRACTION ANALYSIS OF PROTEINS AND RELATED MODEL SYSTEMS							
2	R01 GM21047-09 22550	DORSET, DOUGLAS L ELECTRON DIFFRACTION OF MEMBRANE PHOSPHOLIPIDS	MEDICAL FOUNDATION OF BUFFALO	BUFFALO	82 NEW YORK	05-83	2	82,470	BBCB 131,952
5	R01 GM21164-08 22550	MC CLURE, RICHARD J CRYSTAL STRUCTURAL STUDIES OF SERUM ALBUMIN	UNIVERSITY OF PITTSBURGH	PITTSBURGH	81 PENNSYLVANIA	12-82	0	49,906	BBCB 75,857
5	R01 GM21189-09 22550	DE ROSIER, DAVID J STRUCTURAL STUDIES OF BIOLOGICAL COMPLEXES	BRANDEIS UNIVERSITY	WALTHAM	81 MASSACHUSETTS	02-83	3	87,539	BBCB 141,813
5	R01 GM21189-10 22550	DE ROSIER, DAVID J STRUCTURAL STUDIES OF BIOLOGICAL COMPLEXES	BRANDEIS UNIVERSITY	WALTHAM	82 MASSACHUSETTS	08-83	2	105,490	BBCB 189,882
2	R01 GM21225-07 22550	TULINSKY, ALEXANDER ASYMMETRY, STRUCTURE AND FUNCTION OF A-CHYMOTRYPSIN	MICHIGAN STATE UNIVERSITY	EAST LANSING	82 MICHIGAN	11-82	2	164,390	BBCB 182,590
2	R01 GM21371-08 22550	QUIOCHO, FLORANTE A BINDING PROTEINS FOR ACTIVE TRANSPORT AND CHEMOTAXIS	RICE UNIVERSITY	HOUSTON	82 TEXAS	11-82	4	99,880	BBCB 135,541
5	R01 GM21534-09 22550	SALEMME, FRANCIS R X-RAY STUDIES OF PROTEIN STRUCTURE	UNIVERSITY OF ARIZONA	TUCSON	82 ARIZONA	07-83	0	57,730	BBCA 79,075
5	R01 GM21822-08 22550	VAN DER HELM, DICK STRUCTURE AND CONFORMATION OF SIDEROPHORES AND PEPTIDES	UNIVERSITY OF OKLAHOMA NORMAN	NORMAN	82 OKLAHOMA	04-83	2	74,250	BBCA 102,155
5	R01 GM21967-08 22550	MATTHEWS, BRIAN W STRUCTURE, FUNCTION AND STABILITY OF T4 PHAGE LYSOZYME	UNIVERSITY OF OREGON	EUGENE	82 OREGON	05-83	3	85,720	BBCB 115,133
2	R01 GM22490-07 22550	KARTHA, GOPINATH CYCLIC PEPTIDES, STRUCTURE AND FUNCTION	ROSWELL PARK MEMORIAL INSTITUTE	BUFFALO	82 NEW YORK	08-83	2	47,980	BBCA 68,132
5	R01 GM22663-08 22550	REEKE, GEORGE N, JR COMPUTING METHODS FOR MACROMOLECULAR CYSTALLOGRAPHY	ROCKEFELLER UNIVERSITY	NEW YORK	82 NEW YORK	08-83	1	43,600	BBCB 67,198
5	P01 GM22778-07 22550	RICHARDS, FREDERIC M PROGRAM IN MACROMOLECULAR STRUCTURE, MOTION, CONTROL	YALE UNIVERSITY	NEW HAVEN	82 CONNECTICUT	03-83	3	438,140	SSS 687,621
3	P01 GM22778-07S1 22550	RICHARDS, FREDERIC M NIGMS SHARED INSTRUMENTATION GRANT	YALE UNIVERSITY	NEW HAVEN	82 CONNECTICUT	03-83	0	183,400	SSS 183,400
5	R01 GM23306-07 22550	HACKERT, MARVIN L STRUCTURE AND FUNCTION OF SUPRA-MOLECULAR ASSEMBLAGES	UNIVERSITY OF TEXAS AUSTIN	AUSTIN	82 TEXAS	06-83	0	33,980	BBCB 45,348
5	R01 GM24485-06 22550	STROUD, ROBERT M STRUCTURE AND FUNCTION OF PROTEINS AT MOLECULAR LEVEL	UNIVERSITY OF CALIFORNIA SAN FRANCISCO	SAN FRANCISCO	82 CALIFORNIA	03-83	1	85,510	BBCB 111,491
5	R01 GM24526-05 22550	JEFFREY, GEORGE A STRUCTURAL STUDIES OF CARBOHYDRATES	UNIVERSITY OF PITTSBURGH	PITTSBURGH	82 PENNSYLVANIA	12-82	0	69,080	BBCA 104,482

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MOLECULAR BASIS OF DISEASE SECTION									
		DIFFRACTION ANALYSIS OF PROTEINS AND RELATED MODEL SYSTEMS							
2	R01 GM24623-04	HAMILTON, JEAN A	INDIANA UNIV-PURDUE UNIV AT INDIANAPOLIS		82	03-83	2	BBCA	
	22550	STRUCTURAL STUDIES ON COMPLEXES BY X-RAY DIFFRACTION		INDIANAPOLIS	INDIANA			38,810	55,094
5	R01 GM25217-05	DONIACH, SEBASTIAN	STANFORD UNIVERSITY		82	03-83	1	BBCA	
	22550	X-RAY STUDIES OF CA AND TB IONS IN BIOLOGICAL SYSTEMS		STANFORD	CALIFORNIA			43,730	69,093
5	R01 GM25234-06	SIGLER, PAUL B	UNIVERSITY OF CHICAGO		82	08-83	0	BBCB	
	22550	SPECIFIC MOLECULAR INTERACTIONS AT THE CELL SURFACE		CHICAGO	ILLINOIS			45,390	76,709
2	R01 GM25432-04	AMZEL, LEON M	JOHNS HOPKINS UNIVERSITY		82	03-83	3	BBCB	
	22550	3-DIMENSIONAL STRUCTURE OF PROTON TRANSLOCATING ATPASES		BALTIMORE	MARYLAND			87,150	116,975
5	R01 GM25672-05	STOUT, CHARLES D	UNIVERSITY OF PITTSBURGH		82	07-83	3	BBCB	
	22550	CRYSTAL STRUCTURES OF AZOTOBACTER PROTEINS		PITTSBURGH	PENNSYLVANIA			70,860	106,667
5	R01 GM26203-03	CARTER, CHARLES W, JR	UNIVERSITY OF NORTH CAROLINA CHAPEL HILL		81	03-83	0	BBCB	
	22550	TRP-TRNA LIGASE AND SUBSTRATE COMPLEXES: X-RAY STUDY		CHAPEL HILL	NORTH CAROLINA			37,983	54,696
2	R01 GM26346-04	WHITE, STEPHEN H	UNIVERSITY OF CALIFORNIA IRVINE		82	03-83	2	BBCB	
	22550	STRUCTURAL STUDIES OF BILAYER SOLUTIONS		IRVINE	CALIFORNIA			207,920	237,694
2	R01 GM26357-04	DEROSIER, DAVID J	BRANDEIS UNIVERSITY		82	03-83	2	BBCB	
	22550	STRUCTURAL STUDIES OF CELLULAR ASSEMBLIES OF ACTIN		WALTHAM	MASSACHUSETTS			34,320	54,358
2	R01 GM26360-04	TULINSKY, ALEXANDER	MICHIGAN STATE UNIVERSITY		82	04-83	2	BBCB	
	22550	CRYSTAL-SOLUTION STUDY OF CATALYTICALLY ACTIVE ALDOLASE		EAST LANSING	MICHIGAN			109,000	144,998
5	R01 GM26680-03	HSU, I-NAN	CALIFORNIA STATE UNIVERSITY NORTHRIDGE		82	06-83	0	BBCB	
	22550	CRYSTALLOGRAPHIC STUDIES OF PENICILLOPEPSIN		NORTHRIDGE	CALIFORNIA			32,960	45,814
5	R01 GM26767-03	FENNA, ROGER E	UNIVERSITY OF MIAMI		82	11-82	0	BBCB	
	22550	STRUCTURAL STUDIES OF LACTOSE SYNTHETASE		MIAMI	FLORIDA			26,250	41,819
5	R01 GM26895-04	JURNAK, FRANCES A	UNIVERSITY OF CALIFORNIA RIVERSIDE		82	07-83	0	BBCB	
	22550	CRYSTALLOGRAPHIC STUDIES OF PROTEIN ELONGATION FACTORS		RIVERSIDE	CALIFORNIA			26,982	36,187
5	R01 GM26905-03	RUBIN, BYRON H	EMORY UNIVERSITY		81	07-83	0	BBCB	
	22550	THREE-DIMENSIONAL STRUCTURE OF CHLOROPEROXIDASE		ATLANTA	GEORGIA			28,808	39,298
5	R01 GM27024-03	CZERWINSKI, EDMUND W	UNIVERSITY OF TEXAS MED BR GALVESTON		82	12-82	0	BBCA	
	22550	STRUCTURAL STUDIES OF ISOCITRATE DEHYDROGENASE		GALVESTON	TEXAS			41,450	55,083
5	R01 GM27076-03	SWEET, ROBERT M	UNIVERSITY OF CALIFORNIA LOS ANGELES		82	12-82	0	BBCB	
	22550	X-RAY DIFFRACTION STUDIES OF PHYCOBILISOME ASSEMBLY		LOS ANGELES	CALIFORNIA			49,270	64,544
5	R01 GM27100-03	ARGOS, PATRICK	PURDUE UNIVERSITY WEST LAFAYETTE		82	05-83	0	BBCB	
	22550	STRUCTURAL STUDIES OF THE PHOSPHORIBOSYLTRANSFERASES		WEST LAFAYETTE	INDIANA			36,860	50,636

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		MOLECULAR BASIS OF DISEASE SECTION							
		DIFFRACTION ANALYSIS OF PROTEINS AND RELATED MODEL SYSTEMS							
5	R01 GM27123-03 22550	PETSKO, GREGORY A CRYSTALLOGRAPHIC STUDIES OF PROTEIN DYNAMICS	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	CAMBRIDGE	82 MASSACHUSETTS	11-82	0	22,330	BBCB 35,650
5	R01 GM27144-03 22550	COOK, WILLIAM J THE MOLECULAR STRUCTURE OF UBIQUITIN	UNIVERSITY OF ALABAMA IN BIRMINGHAM	BIRMINGHAM	82 ALABAMA	03-83	0	12,870	BBCB 17,477
5	R01 GM27274-03 22550	PEARSON, ROBERT H SINGLE CRYSTAL MOLECULAR STRUCTURES OF LECITHIN	ROSWELL PARK MEMORIAL INSTITUTE	BUFFALO	82 NEW YORK	12-82	0	35,900	BBCB 53,591
5	R01 GM27278-03 22550	MC INTOSH, THOMAS J LIPID BILAYER STRUCTURE: EFFECT OF SMALL MOLECULES	DUKE UNIVERSITY	DURHAM	82 NORTH CAROLINA	06-83	0	41,930	BBCB 62,895
5	R01 GM27645-04 22550	MC PHERSON, ALEXANDER X-RAY DIFFRACTION ANALYSIS OF DNA BINDING PROTEINS	UNIVERSITY OF CALIFORNIA RIVERSIDE	RIVERSIDE	82 CALIFORNIA	08-83	3	74,810	BBCB 101,811
5	R01 GM27682-03 22550	ARGOS, PATRICK COMPARISON AND PREDICTION OF PROTEIN STRUCTURE	PURDUE UNIVERSITY WEST LAFAYETTE	WEST LAFAYETTE	82 INDIANA	07-83	0	27,254	BBCB 38,156
2	R01 GM27838-04 22550	MC PHERSON, ALEXANDER X-RAY CRYSTALLOGRAPHIC ANALYSES OF PROTEIN STRUCTURES	UNIVERSITY OF CALIFORNIA RIVERSIDE	RIVERSIDE	82 CALIFORNIA	06-83	4	58,450	BBCB 79,675
5	R01 GM27907-03 22550	RUBIN, BYRON H STRUCTURE STUDIES OF PROTEINS GLYCOPROTEINS AND ENZYMES	EMORY UNIVERSITY	ATLANTA	82 GEORGIA	04-83	0	30,280	BBCB 45,420
5	R01 GM28652-02 22550	MEEHAN, EDWARD J, JR MOLECULAR STRUCTURE OF PISUM SATIVUM LECTIN	UNIVERSITY OF ALABAMA IN HUNTSVILLE	HUNTSVILLE	82 ALABAMA	11-82	1	26,900	BBCB 35,983
5	R01 GM28668-02 22550	UNWIN, NIGEL DIFFRACTION STUDIES OF GAP JUNCTIONS AND RIBOSOMES	STANFORD UNIVERSITY	STANFORD	82 CALIFORNIA	11-82	1	21,020	BBCB 33,212
5	R01 GM28848-02 22550	JEFFREY, GEORGE A CRYSTAL STRUCTURE PHASE DETERMINATION	UNIVERSITY OF PITTSBURGH	PITTSBURGH	82 PENNSYLVANIA	03-83	1	28,880	BBCB 43,898
5	R01 GM29044-02 22550	MOFFAT, JOHN K PROTEINS OF PHYSIOLOGICAL INTEREST: STRUCTURE-FUNCTION	CORNELL UNIVERSITY ITHACA	ITHACA	82 NEW YORK	04-83	3	93,000	BBCB 137,293
1	R01 GM29076-01A1 22550	KIM, JUNG-JA P STRUCTURE AND MECHANISM OF A FLAVOPROTEIN DEHYDROGENASE	MEDICAL COLLEGE OF WISCONSIN	MILWAUKEE	82 WISCONSIN	02-83	2	59,120	BBCB 75,294
5	R01 GM29243-02 22550	ENGELMAN, DONALD M NEUTRON STUDIES OF BACTERIORHODOPSIN STRUCTURE	YALE UNIVERSITY	NEW HAVEN	82 CONNECTICUT	12-82	1	58,770	BBCB 92,857
5	R01 GM29287-02 22550	KIM, SUNG-HOU STRUCTURES OF ECORI RESTRICTION-MODIFICATION ENZYMES	UNIVERSITY OF CALIFORNIA BERKELEY	BERKELEY	82 CALIFORNIA	07-83	3	59,860	BBCB 83,265
5	R01 GM29427-02 22550	COOK, WILLIAM J THE MOLECULAR STRUCTURE OF CALMODULIN	UNIVERSITY OF ALABAMA IN BIRMINGHAM	BIRMINGHAM	82 ALABAMA	06-83	1	46,260	BBCB 62,821

T	GRANT NUMBER / PROG-AREA	INVESTIGATOR / PROJECT TITLE	GRANTEE INSTITUTION	CITY	FY / STATE	END-DATE	FUT-YRS AVAILABLE DIRECT	IRG SUB DOLLARS TOTAL
MOLECULAR BASIS OF DISEASE SECTION								
		DIFFRACTION ANALYSIS OF PROTEINS AND RELATED MODEL SYSTEMS						
1	R01 GM29533-01A1 22550	BAU, ROBERT ABSOLUTE CONFIGURATION STUDIES BY NEUTRON DIFFRACTION	UNIVERSITY OF SOUTHERN CALIFORNIA	LOS ANGELES	82 CALIFORNIA	06-83	2 34,850	BBCA 53,321
1	R01 GM29548-01 22550	HENDRICKSON, WAYNE A ANOMALOUS-SCATTERING STUDIES OF PROTEIN STRUCTURE	U.S. NAVAL RESEARCH LABORATORY	WASHINGTON	82 DIST OF COL	01-83	2 82,130	BBCB 82,130
5	R01 GM29616-02 22550	KOSSIAKOFF, ANTHONY A NEUTRON STUDIES OF PROTEIN DYNAMICS AND SOLVATION	ASSOCIATED UNIV-BROOKHAVEN NATL LAB	UPTON	82 NEW YORK	06-83	1 68,340	BBCB 109,344
5	R01 GM29791-09 22550	TSERNOGLOU, DEMETRIUS X-RAY DIFFRACTION ANALYSIS OF THROMBIN AND NEUROTOXIN	WAYNE STATE UNIVERSITY	DETROIT	82 MICHIGAN	01-83	1 54,480	BBCB 74,064
5	R01 GM29829-02 22550	MAKOWSKI, LEE STRUCTURAL STUDIES OF VIRUSES AND MEMBRANES	COLUMBIA UNIVERSITY	NEW YORK	82 NEW YORK	03-83	1 63,710	BBCB 103,398
9	R01 GM30048-04 CA 22550	ROBERTUS, JON D STRUCTURAL ANALYSIS OF THE ANTI-TUMOR PROTEIN RICIN	UNIVERSITY OF TEXAS AUSTIN	AUSTIN	82 TEXAS	02-83	2 51,520	BBCB 67,802
1	R01 GM30105-01 AI 22550	HACKERT, MARVIN L STRUCTURE AND FUNCTION OF HISTIDINE DECARBOXYLASE	UNIVERSITY OF TEXAS AUSTIN	AUSTIN	82 TEXAS	01-83	2 52,300	BBCB 67,105
1	R01 GM30165-01A1 22550	TEETER, MARTHA M STRUCTURE/FUNCTION IN HEMOLYTIC TOXINS	BOSTON UNIVERSITY	BOSTON	82 MASSACHUSETTS	06-83	2 51,780	BBCB 86,716
1	R13 GM30505-01 GM 22550	HENDRICKSON, WAYNE A GORDON CONFERENCE ON DIFFRACTION METHODS IN BIOLOGY	GORDON RESEARCH CONFERENCES	KINGSTON	82 RHODE ISLAND	04-83	0 2,000	BBCB 2,000
1	R01 GM30551-01 22550	SUDDATH, FRED L, JR HIGH RESOLUTION STRUCTURE OF PISUM SATIVUM LECTIN	UNIVERSITY OF ALABAMA IN BIRMINGHAM	BIRMINGHAM	82 ALABAMA	04-83	2 29,150	BBCB 39,586
1	R01 GM30830-01 22550	SARMA, RAGHUPATHY STRUCTURE OF A SPECIFIC BACTERIAL PROTEIN	STATE UNIVERSITY NEW YORK STONY BROOK	STONY BROOK	82 NEW YORK	06-83	1 29,003	BBCB 41,395
1	R01 GM30902-01 22550	KARLE, ISABELLA L X-RAY DIFFRACTION STUDIES OF OLIGOPEPTIDES	U.S. NAVAL RESEARCH LABORATORY	WASHINGTON	82 DIST OF COL	07-83	2 53,550	BBCA 53,550
1	R01 GM31212-01 22550	PETSKO, GREGORY A STRUCTURE AND REACTION OF IRON SUPEROXIDE DISMUTASE	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	CAMBRIDGE	82 MASSACHUSETTS	06-83	2 15,420	BBCB 23,104

**	0	*CENTERS (P50)	0	0
**	2	PROGRAM PROJECTS (P01)	621,540	871,021
**	74	REGULAR PROJECTS (R01)	4,800,797	6,750,652
**	1	ALL OTHERS (P30, P41, R13, R23, R25)	2,000	2,000
**	77	TOTALS	5,424,337	7,623,673

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T	GRANT NUMBER / PROG-AREA	INVESTIGATOR / PROJECT TITLE	GRANTEE INSTITUTION	CITY	STATE	FY	END-DATE	FUT-YRS AVAILABLE	DOLLARS DIRECT	IRG SUB TOTAL
	MOLECULAR BASIS OF DISEASE SECTION	THEORETICAL STUDIES OF PROTEINS AND RELATED MODEL SYSTEMS								
5	R01 GM10865-23 22600	ALBRECHT, ANDREAS C BASIC PHOTOELECTRIC STUDIES IN ORGANIC CONDENSED PHASE	CORNELL UNIVERSITY ITHACA	ITHACA	NEW YORK	82	06-83	3	84,950	BBCA 128,406
5	R01 GM13684-16 22600	APPLEQUIST, JON B THEORY OF MOLECULAR OPTICAL PROPERTIES	IOWA STATE UNIVERSITY OF SCIENCE & TECH	AMES	IOWA	82	08-83	2	36,860	BBCA 49,392
5	R01 GM16260-14 22600	WILLIAMS, DONALD E INTERMOLECULAR INTERACTIONS IN AMINO ACIDS AND PEPTIDES	UNIVERSITY OF LOUISVILLE	LOUISVILLE	KENTUCKY	82	12-82	1	34,800	BBCA 52,444
5	R01 GM18051-11 22600	FRAUENFELDER, HANS HEME PROTEIN REACTIONS	UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN	URBANA	ILLINOIS	82	05-83	2	93,755	BBCB 129,182
5	R01 GM22028-08 22600	PARR, ROBERT G THE QUANTUM THEORY OF MOLECULAR ISOELECTRONIC CHANGES	UNIVERSITY OF NORTH CAROLINA CHAPEL HILL	CHAPEL HILL	NORTH CAROLINA	82	02-83	2	45,420	BBCA 63,406
5	R01 GM22728-07 22600	RICE, STUART A WATER: EXPERIMENTAL AND THEORETICAL STUDIES	UNIVERSITY OF CHICAGO	CHICAGO	ILLINOIS	82	02-83	0	63,050	BBCB 89,869
2	R01 GM22937-07 22600	DAVIDSON, ERNEST R EXCITED STATES OF BIOMOLECULES	UNIVERSITY OF WASHINGTON	SEATTLE	WASHINGTON	82	06-83	2	55,960	BBCA 74,986
5	R01 GM23670-06 22600	BATES, RICHARD D, JR MOLECULAR DYNAMICS OF HYDROGEN BONDING IN FLUIDS	GEORGETOWN UNIVERSITY	WASHINGTON	DIST OF COL	82	12-82	0	38,860	BBCA 54,316
2	R01 GM23942-04 22600	RHODES, WILLIAM C ELECTRONIC RESPONSE PROPERTIES OF BIOPOLYMERS	FLORIDA STATE UNIVERSITY	TALLAHASSEE	FLORIDA	82	03-83	2	31,860	BBCA 46,038
5	R01 GM24492-05 22600	WARSHEL, ARIEH THEORETICAL STUDIES OF ENZYMATIC REACTIONS	UNIVERSITY OF SOUTHERN CALIFORNIA	LOS ANGELES	CALIFORNIA	82	12-82	0	37,860	BBCA 54,356
5	R01 GM24914-08 22600	BEVERIDGE, DAVID L SOLVENT EFFECTS ON BIOMOLECULAR STRUCTURE AND PROCESS	HUNTER COLLEGE	NEW YORK	NEW YORK	82	05-83	1	93,650	BBCB 149,453
2	R01 GM26462-04 22600	ALLEN, LELAND C ELECTRONIC STRUCTURE OF ENZYMES AND REDOX PROTEINS	PRINCETON UNIVERSITY	PRINCETON	NEW JERSEY	82	03-83	2	48,580	SSS 79,671
5	R01 GM26525-03 22600	DAVID, CARL W POLYPEPTIDE SOLUTION CONFORMATION PREDICTION	UNIVERSITY OF CONNECTICUT	STORRS STORRS	CONNECTICUT	81	09-82	0	48,841	BBCA 69,038
2	R01 GM26588-07 22600	BERNE, BRUCE J MOLECULAR DYNAMICS OF AQUEOUS SOLUTIONS	COLUMBIA UNIVERSITY	NEW YORK	NEW YORK	82	04-83	4	58,430	BBCA 97,929
5	R01 GM26864-04 22600	MC QUARRIE, DONALD A FORCE BALANCE IN POLYELECTROLYTE SYSTEMS	UNIVERSITY OF CALIFORNIA DAVIS	DAVIS	CALIFORNIA	82	11-82	1	34,650	BBCB 45,392
5	R01 GM27945-04 22600	FIXMAN, MARSHALL THEORETICAL CHEMISTRY AND POLYMERS	COLORADO STATE UNIVERSITY	FORT COLLINS	COLORADO	82	06-83	3	89,340	BBCB 124,004

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MOLECULAR BASIS OF DISEASE SECTION									
		THEORETICAL STUDIES OF PROTEINS AND RELATED MODEL SYSTEMS							
5	R01 GM27951-04 22600	GIBBS, JULIAN H STATISTICAL MECHANICS OF BIOLOGICAL MACROMOLECULES	AMHERST COLLEGE	AMHERST	82 MASSACHUSETTS	08-83	0	BBCB 44,300	66,704
5	R01 GM27955-03 22600	DEL BENE, JANET E HYDROGEN BONDING, H+ & LI+ ASSOCIATION--MOLECULAR ORBIT	YOUNGSTOWN STATE UNIVERSITY	YOUNGSTOWN	82 OHIO	07-83	0	BBCA 26,340	32,045
5	R01 GM29391-02 22600	SCHEINER, STEVE PROTON TRANSFERS IN PROTEINS	SOUTHERN ILLINOIS UNIVERSITY CARBONDALE	CARBONDALE	82 ILLINOIS	06-83	1	BBCA 32,782	46,972
5	R01 GM29750-02 22600	WILSON, KENT R ION TRANSPORT THROUGH MEMBRANE CHANNELS	UNIVERSITY OF CALIFORNIA SAN DIEGO	LA JOLLA	82 CALIFORNIA	06-83	1	BBCB 44,460	59,176
1	R01 GM30282-01 22600	HASCHEMEYER, RUDY H BIOPHYSICAL FLUX METHODS: THEORY AND APPLICATIONS	CORNELL UNIVERSITY MEDICAL CENTER	NEW YORK	82 NEW YORK	01-83	2	BBCA 25,050	35,826
1	R01 GM30393-01 22600	SALEMME, FRANCIS R STRUCTURAL COOPERATIVITY IN PROTEINS	UNIVERSITY OF ARIZONA	TUCSON	82 ARIZONA	04-83	2	BBCA 41,360	52,050
5	R01 GM30518-02 22600	HONIG, BARRY H COMPUTER STUDIES OF PROTEIN STRUCTURE AND FUNCTION	COLUMBIA UNIVERSITY	NEW YORK	82 NEW YORK	08-83	1	BBCA 52,580	89,228
1	R01 GM30564-01 CA 22600	HAGLER, ARNOLD T A DYNAMIC SIMULATION OF LIGAND BINDING TO DHF-REDUCTASE	AGOURON INSTITUTE	LA JOLLA	82 CALIFORNIA	04-83	2	BBCA 94,420	140,404
7	R01 GM30793-01 22600	HAGLER, ARNOLD T WALTER IN BIOLOGICAL SYSTEM-MOLECULAR RECGONITON	AGOURON INSTITUTE	LA JOLLA	82 CALIFORNIA	12-82	1	BBCA 39,050	58,692
	** 0	*CENTERS (P50)						0	0
	** 0	PROGRAM PROJECTS (P01)						0	0
	** 25	REGULAR PROJECTS (R01)						1,297,208	1,888,979
	** 0	ALL OTHERS (P30, P41, R13, R23, R25)						0	0
	** 25	TOTALS						1,297,208	1,888,979

SUMMARY OF MOLECULAR BASIS OF DISEASE SECTION

*** 0	*CENTERS (P50)	0	0
*** 6	PROGRAM PROJECTS (P01)	1,502,696	2,263,047
*** 581	REGULAR PROJECTS (R01)	36,081,486	51,722,378
*** 4	ALL OTHERS (P30, P41, R13, R23, R25)	9,000	9,000
*** 591	TOTALS	37,593,182	53,994,425

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MOLECULAR BASIS OF DISEASE SECTION										
SUMMARY OF CELLULAR AND MOLECULAR BASIS OF DISEASE PROGRAM										
****	1	*CENTERS (P50)							380,000	597,050
****	12	PROGRAM PROJECTS (P01)							3,030,308	4,499,487
****	1,036	REGULAR PROJECTS (R01)							65,562,241	94,326,064
****	6	ALL OTHERS (P30, P41, R13, R23, R25)							107,933	107,933
****	1,055	TOTALS							69,080,482	99,530,534

T GRANT NUMBER / PROG-AREA	INVESTIGATOR / PROJECT TITLE	GRANTEE INSTITUTION	CITY	STATE	FY	END-DATE	FUT-YRS AVAILABLE	IRG SUB DOLLARS DIRECT	TOTAL
MOLECULAR AND MEDICAL GENETICS SECTION									
PHYSICAL AND ORGANIC CHEMISTRY OF NUCLEIC ACIDS									
5 R01 GM10840-24	TINOCO, IGNACIO, JR	UNIVERSITY OF CALIFORNIA BERKELEY			82	11-82	2	BBCA	
21100	STRUCTURE AND FUNCTION OF NUCLEIC ACIDS		BERKELEY	CALIFORNIA				125,533	164,448
5 R01 GM11180-19	HEARST, JOHN E	UNIVERSITY OF CALIFORNIA BERKELEY			82	06-83	1	BBCB	
21100	STRUCTURE-FUNCTION RELATIONSHIPS OF NUCLEIC ACIDS		BERKELEY	CALIFORNIA				127,566	181,016
5 R01 GM11518-18	GILHAM, PETER T	PURDUE UNIVERSITY WEST LAFAYETTE			82	06-83	1	BIO	
21100	FINE STRUCTURE OF NUCLEIC ACIDS		WEST LAFAYETTE	INDIANA				50,163	68,917
2 R01 GM11916-19	ZIMM, BRUNO H	UNIVERSITY OF CALIFORNIA SAN DIEGO			82	12-82	4	BBCA	
21100	NUCLEIC ACIDS AND CHROMOSOMAL DNA		LA JOLLA	CALIFORNIA				99,326	127,668
5 R01 GM14825-16	CANTOR, CHARLES R	COLUMBIA UNIVERSITY			82	01-83	2	BBCA	
21100	NEW TECHNIQUES FOR COMPLEX MACROMOLECULAR ASSEMBLIES		NEW YORK	NEW YORK				86,370	144,756
5 R01 GM15792-16	VON HIPPEL, PETER H	UNIVERSITY OF OREGON			82	12-82	0	BBCA	
21100	STRUCTURE AND RELATIONS OF PROTEINS AND NUCLEIC ACIDS		EUGENE	OREGON				116,400	155,923
5 R01 GM16066-15	TS'O, PAUL O	JOHNS HOPKINS UNIVERSITY			82	06-83	0	SSS	
21100	NUCLEIC ACID CHEMISTRY AND ITS BIOMEDICAL APPLICATION		BALTIMORE	MARYLAND				129,257	191,386
5 R01 GM17371-10	ARNOTT, STRUTHER	PURDUE UNIVERSITY WEST LAFAYETTE			82	08-83	1	BBCA	
21100	MOLECULAR GEOMETRIES OF NUCLEIC ACIDS		WEST LAFAYETTE	INDIANA				60,938	83,553
5 R01 GM17378-13	SUNDARALINGAM, MUTTAIYA	UNIVERSITY OF WISCONSIN MADISON			82	02-83	3	BBCA	
21100	X-RAY STUDIES ON NUCLEIC ACID CONSTITUENTS		MADISON	WISCONSIN				49,959	69,823
2 R01 GM18455-09	SUNDARALINGAM, MUTTAIYA	UNIVERSITY OF WISCONSIN MADISON			82	06-83	2	BBCA	
21100	X-RAY DIFFRACTION STUDIES OF RIBONUCLEIC ACIDS		MADISON	WISCONSIN				56,165	79,677
5 R01 GM19059-11	UHLENBECK, OLKE C	UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN			82	12-82	0	BBCA	
21100	STRUCTURE AND FUNCTION OF RIBONUCLEIC ACID		URBANA	ILLINOIS				71,780	102,215
2 R01 GM19060-10A1	GRAY, DONALD M	UNIVERSITY OF TEXAS DALLAS			82	06-83	4	BBCA	
21100	POLYNUCLEOTIDE AND POLYNUCLEOTIDE-PROTEIN STRUCTURES		RICHARDSON	TEXAS				74,794	96,947
2 R01 GM19395-11	GILHAM, P T	PURDUE UNIVERSITY WEST LAFAYETTE			82	04-83	4	BIO	
21100	SYNTHESIS OF POLYRIBONUCLEOTIDES OF DEFINED SEQUENCE		WEST LAFAYETTE	INDIANA				75,118	96,556
5 R01 GM20008-07	HAMORI, EUGENE	TULANE UNIVERSITY OF LOUISIANA			81	03-83	0	BBCA	
21100	COMPUTER-BASED REPRESENTATION OF LONG DNA SEQUENCES		NEW ORLEANS	LOUISIANA				20,290	27,189
5 R01 GM20195-25	SCHELLMAN, JOHN A	UNIVERSITY OF OREGON			82	03-83	0	BBCA	
21100	INTERACTIONS OF NUCLEOTIDES AND PROTEINS		EUGENE	OREGON				75,330	100,877
5 R01 GM20672-22	RAMIREZ, FAUSTO	STATE UNIVERSITY NEW YORK STONY BROOK			82	06-83	0	MCHA	
21100	SUPERPHOSPHORYLATING AGENTS		STONY BROOK	NEW YORK				82,934	124,181

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		MOLECULAR AND MEDICAL GENETICS SECTION							
		PHYSICAL AND ORGANIC CHEMISTRY OF NUCLEIC ACIDS							
5	R01 GM20861-09 21100	OLSON, WILMA K NUCLEIC ACID CONFORMATION, PROPERTIES, AND INTERACTIONS	RUTGERS THE STATE UNIV NEW BRUNSWICK	NEW BRUNSWICK	82 NEW JERSEY	07-83	0	52,469	BBCA 82,031
5	R01 GM21176-09 21100	BAUER, WILLIAM R VIRAL AND PLASMID DNA STRUCTURE, PROTEIN INTERACTIONS	STATE UNIVERSITY NEW YORK	STONY BROOK	82 NEW YORK	11-82	2	64,376	VR 97,061
5	R01 GM21479-08 21100	JOHNSON, WALTER C, JR NUCLEIC ACID CONFORMATION AND FUNCTION	OREGON STATE UNIVERSITY	CORVALLIS	82 OREGON	11-82	3	62,326	BBCA 79,710
5	R01 GM21589-08 21100	BERMAN, HELEN MODEL COMPOUNDS FOR NUCLEIC ACID INTERACTIONS	INSTITUTE FOR CANCER RESEARCH	PHILADELPHIA	82 PENNSYLVANIA	11-82	2	56,927	BBCA 85,407
5	R01 GM21619-08 21100	LAUFFER, MAX A INTERACTIONS OF TOBACCO MOSAIC VIRUS AND ITS COMPONENTS	UNIVERSITY OF PITTSBURGH	PITTSBURGH	82 PENNSYLVANIA	02-83	1	68,647	BBCB 103,303
5	R01 GM21747-08 21100	WRIGHT, GEORGE E DESIGN OF SELECTIVE INHIBITORS OF DNA POLYMERASES	UNIVERSITY OF MASSACHUSETTS MEDICAL SCH	WORCESTER	82 MASSACHUSETTS	12-82	1	70,383	BNP 118,251
5	R01 GM21966-08 21100	CROTHERS, DONALD M THE PHYSICAL BASIS FOR MOLECULAR GENETIC PHENOMENA	YALE UNIVERSITY	NEW HAVEN	82 CONNECTICUT	01-83	1	73,547	BBCA 115,044
5	R01 GM21998-08 21100	HALEY, BOYD E APPLICATION OF PHOTOAFFINITY NUCLEOTIDE ANALOGS	UNIVERSITY OF WYOMING	LARAMIE	82 WYOMING	02-83	3	76,615	PC 105,715
5	R01 GM22029-09 21100	WETMUR, JAMES G RENATURATION AND HYBRIDIZATION OF NUCLEIC ACIDS	MOUNT SINAI SCHOOL OF MEDICINE	NEW YORK	82 NEW YORK	08-83	0	46,300	BBCA 68,007
5	R01 GM22827-06 21100	BLAKE, RICHARD D STRUCTURE AND INTERACTIONS OF DNA	UNIVERSITY OF MAINE AT ORONO	ORONO	82 MAINE	06-83	0	32,197	BBCA 46,239
5	R01 GM22870-06 21100	BENDICH, ARNOLD J REPEATED DNA SEQUENCES AND LAND PLANT EVOLUTION	UNIVERSITY OF WASHINGTON	SEATTLE	81 WASHINGTON	11-82	0	71,556	GEN 95,375
2	R01 GM22873-08 21100	BARKLEY, MARY D PHYSICAL STUDIES OF PROTEIN-DNA INTERACTIONS	UNIVERSITY OF KENTUCKY	LEXINGTON	82 KENTUCKY	08-83	2	69,494	BBCA 101,307
2	R01 GM22939-07 21100	TURNER, DOUGLAS H KINETIC AND SPECTROSCOPIC STUDIES OF NUCLEIC ACIDS	UNIVERSITY OF ROCHESTER	ROCHESTER	82 NEW YORK	02-83	4	125,306	BBCA 165,492
5	R01 GM22969-07 21100	KEARNS, DAVID R STRUCTURAL STUDIES OF RNA	UNIVERSITY OF CALIFORNIA SAN DIEGO	LA JOLLA	82 CALIFORNIA	11-82	0	70,187	BBCA 90,395
5	R01 GM23331-04 21100	BLOCH, DAVID P FLOW-CYTOMETRIC STUDIES OF CHROMATIN	UNIVERSITY OF TEXAS AUSTIN	AUSTIN	82 TEXAS	02-83	1	42,969	CP 56,958
2	R01 GM23509-04 21100	BRESLAUER, KENNETH J DNA POLYMORPHISM IN SOLUTION: A THERMODYNAMIC STUDY	RUTGERS THE STATE UNIV NEW BRUNSWICK	NEW BRUNSWICK	82 NEW JERSEY	03-83	2	62,751	BBCA 96,842

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		MOLECULAR AND MEDICAL GENETICS SECTION PHYSICAL AND ORGANIC CHEMISTRY OF NUCLEIC ACIDS							
5	R01 GM24443-05 21100	PROHOFSKY, EARL W MOTIONAL DYNAMICS OF DNA HELICES	PURDUE UNIVERSITY WEST LAFAYETTE	WEST LAFAYETTE	INDIANA	82	12-82	0 61,010	BBCA 85,414
5	R01 GM24494-05 21100	BORER, PHILIP N BASIC NUCLEIC ACID STRUCTURES: FORM AND INTERACTION	UNIVERSITY OF CALIFORNIA IRVINE	IRVINE	CALIFORNIA	82	02-83	1 34,356	BBCA 44,417
5	R01 GM24864-08 21100	PARTHASARATHY, RENGACHARY STRUCTURE AND FUNCTION OF MODIFIED NUCLEOSIDES OF RNA	ROSWELL PARK MEMORIAL INSTITUTE	BUFFALO	NEW YORK	82	11-82	0 39,210	BBCA 53,163
5	R01 GM25151-05 21100	HEARST, JOHN E NUCLEIC ACID INTERACTIONS WITH SYNTHETIC PSORALENS	UNIVERSITY OF CALIFORNIA BERKELEY	BERKELEY	CALIFORNIA	82	03-83	1 78,230	MCHA 102,481
2	R01 GM25729-04 21100	GREENE, PATRICIA J SEQUENCE-SPECIFIC DNA-PROTEIN INTERACTIONS	UNIVERSITY OF CALIFORNIA SAN FRANCISCO	SAN FRANCISCO	CALIFORNIA	82	11-82	2 50,000	BIO 65,500
5	R01 GM25889-03 21100	GILL, STANLEY J THERMODYNAMIC STUDY OF PROTEIN-NUCLEIC ACID INTERACTIONS	UNIVERSITY OF COLORADO AT BOULDER	BOULDER	COLORADO	81	11-82	0 41,054	BBCA 57,476
5	R01 GM26249-04 21100	USHER, DAVID A TEMPLATE REACTIONS AND CHEMICAL EVOLUTION	CORNELL UNIVERSITY ITHACA	ITHACA	NEW YORK	82	03-83	0 32,104	MCHA 53,639
5	R01 GM26870-03 21100	CHAPMAN, TOBY M GRAFT POLYMERS AS SUPPORTS FOR NUCLEIC ACID SYNTHESIS	UNIVERSITY OF PITTSBURGH	PITTSBURGH	PENNSYLVANIA	82	06-83	0 39,316	BNP 57,959
5	R01 GM26892-04 21100	HATTMAN, STANLEY M ANALYSIS OF DNA MODIFICATION BY MASS SPECTROMETRY	UNIVERSITY OF ROCHESTER	ROCHESTER	NEW YORK	82	06-83	0 111,926	SSS 167,676
5	R01 GM26988-03 21100	ENGEL, ROBERT R A CHEMICAL APPROACH TO GENETIC REGULATION	QUEENS COLLEGE	NEW YORK	NEW YORK	82	12-82	0 53,790	MCHA 88,108
5	R01 GM27002-06 21100	BOBST, ALBERT M SPIN ASSAY FOR NUCLEIC ACID BINDING PROTEINS	UNIVERSITY OF CINCINNATI	CINCINNATI	OHIO	82	02-83	2 47,698	BBCA 66,777
5	R01 GM27046-03 21100	ALLEN, FRITZ S AN ELECTRIC DICHROISM STUDY OF DNA & DNA-DRUG ADDUCTS	UNIVERSITY OF NEW MEXICO ALBUQUERQUE	ALBUQUERQUE	NEW MEXICO	82	12-82	0 28,029	BBCA 37,586
5	R01 GM27291-03 21100	DOWNING, KENNETH H DNA STRUCTURE BY ELECTRON DIFFRACTION AND MICROSCOPY	UNIVERSITY OF CALIFORNIA BERKELEY	BERKELEY	CALIFORNIA	82	03-83	0 33,603	MBY 48,052
5	R01 GM27651-03 21100	VAUGHAN, WORTH E ION AND POLYION DYNAMICS IN DNA SOLUTIONS	UNIVERSITY OF WISCONSIN MADISON	MADISON	WISCONSIN	82	02-83	0 23,589	BBCA 30,751
5	R01 GM27681-03 21100	DERVAN, PETER B MOLECULAR RECOGNITION OF DNA & RNA BY POLYINTERCALATORS	CALIFORNIA INSTITUTE OF TECHNOLOGY	PASADENA	CALIFORNIA	82	03-83	0 49,729	BBCA 69,265
5	R01 GM27767-03 21100	LIM, EDWARD C ELECTRONIC RELAXATION OF DNA BASES	WAYNE STATE UNIVERSITY	DETROIT	MICHIGAN	82	03-83	0 34,704	BBCA 50,394

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T	GRANT NUMBER / PROG-AREA	INVESTIGATOR / PROJECT TITLE	GRANTEE INSTITUTION	CITY	STATE	FY	END-DATE	FUT-YRS	AVAILABLE DOLLARS DIRECT	IRG	SUB TOTAL
	MOLECULAR AND MEDICAL GENETICS SECTION PHYSICAL AND ORGANIC CHEMISTRY OF NUCLEIC ACIDS										
	5 R01 GM27787-02 21100	FRIEDMAN, STANLEY THE EFFECT OF 5-AZACYTIDINE ON THE METHYLATION OF DNA	DOWNSTATE MEDICAL CENTER	NEW YORK	NEW YORK	81	03-83	0	42,239	MBC	60,312
	5 R01 GM27900-03 21100	SAKAI, TED T SYNTHESIS AND PROPERTIES OF BLEOMYCIN ANALOGS	UNIVERSITY OF ALABAMA IN BIRMINGHAM	BIRMINGHAM	ALABAMA	82	02-83	0	48,353	MCHA	65,663
	5 R01 GM28093-03 21100	BLOOMFIELD, VICTOR A POLYAMINE-POLYNUCLEOTIDE INTERACTIONS	UNIVERSITY OF MINNESOTA OF MNPLS-ST PAUL	MINNEAPOLIS	MINNESOTA	82	06-83	1	43,387	BBCA	60,308
	5 R01 GM28252-02 21100	BLATTNER, FREDERICK R APPLICATION OF MICROPROCESSORS TO NUCLEIC ACID DATA	UNIVERSITY OF WISCONSIN MADISON	MADISON	WISCONSIN	81	07-83	0	29,124	SSS	39,820
	5 R01 GM28293-03 21100	HAGERMAN, PAUL J FLEXIBILITY OF DNA	UNIVERSITY OF COLORADO HLTH SCIENCES CTR	DENVER	COLORADO	82	06-83	0	36,591	BBCA	46,471
	5 R01 GM28533-02 21100	TURNER, DOUGLAS H LASER CROSS LINKING OF PROTEINS AND NUCLEIC ACIDS	UNIVERSITY OF ROCHESTER	ROCHESTER	NEW YORK	82	11-82	1	25,990	BBCA	40,446
	5 R01 GM28651-02 21100	ITAKURA, KEIICHI SOLID-PHASE SYNTHESIS OF POLYNUCLEOTIDES	CITY OF HOPE NATIONAL MEDICAL CENTER	DUARTE	CALIFORNIA	82	03-83	0	28,882	PC	41,532
	1 R01 GM28659-01A1 21100	TOPICH, JOSEPH A STRUCTURE-REACTIVITY CORRELATIONS FOR MO COMPLEXES	VIRGINIA COMMONWEALTH UNIVERSITY	RICHMOND	VIRGINIA	82	08-83	2	36,231	BMT	47,664
	5 R01 GM28764-03 21100	REID, BRIAN R RECOGNITION OF TRANSFER RNA BY PROTEINS	UNIVERSITY OF WASHINGTON	SEATTLE	WASHINGTON	82	08-83	1	77,514	PC	102,526
	5 R01 GM28878-03 21100	LE BRETON, PIERRE R UV PHOTOELECTRON STUDIES OF ELECTRONIC STRUCTURE	UNIVERSITY OF ILLINOIS CHICAGO CIRCLE	CHICAGO	ILLINOIS	82	08-83	0	42,036	BBCA	61,179
	5 R01 GM29047-02 21100	HOGAN, MICHAEL E MULTINUCLEAR NMR STUDIES OF DNA INTERNAL MOTIONS	PRINCETON UNIVERSITY	PRINCETON	NEW JERSEY	82	03-83	1	40,538	BBCA	65,074
	5 R01 GM29079-02 21100	PACK, GEORGE R THEORY OF CATION INDUCED CONFORMATION CHANGES IN DNA	ROCKFORD SCHOOL OF MEDICINE	ROCKFORD	ILLINOIS	82	03-83	1	39,948	BBCA	62,718
	5 R01 GM29144-02 21100	WEITH, HERBERT L, III SYNTHESIS OF LONG POLYNUCLEOTIDES OF DEFINED SEQUENCE	PURDUE UNIVERSITY WEST LAFAYETTE	WEST LAFAYETTE	INDIANA	82	04-83	1	54,290	BIO	74,806
	5 R01 GM29158-02 21100	VON HIPPEL, PETER H MOLECULAR INTERACTION IN T4 DNA REPLICATION COMPLEX	UNIVERSITY OF OREGON	EUGENE	OREGON	82	03-83	3	72,060	MG	97,223
	5 R01 GM29184-02 21100	BOLTON, PHILIP H CONFORMATION AND MOLECULAR DYNAMICS OF BACTERIOPHAGES	WESLEYAN UNIVERSITY	MIDDLETOWN	CONNECTICUT	82	03-83	1	25,188	BBCA	31,595
	2 R01 GM29222-02 21100	MARZILLI, LUIGI G SYNTHESIS OF NUCLEIC ACID AND NUCLEOTIDE METAL COMPLEXES	EMORY UNIVERSITY	ATLANTA	GEORGIA	82	02-83	3	66,142	BBCA	99,213

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		MOLECULAR AND MEDICAL GENETICS SECTION								
		PHYSICAL AND ORGANIC CHEMISTRY OF NUCLEIC ACIDS								
5	R01 GM29272-02	ENGLANDER, S WALTER	UNIVERSITY OF PENNSYLVANIA	PHILADELPHIA	82	08-83	2	PC	30,733	50,709
	21100	STUDIES OF STRUCTURE AND DYNAMICS IN NUCLEIC ACID SYSTEM			PENNSYLVANIA					
5	R01 GM29274-02	MARSHALL, ALAN G	OHIO STATE UNIVERSITY		82	12-82	1	BBCA	59,710	80,471
	21100	SOLUTION STRUCTURE OF RIBOSOMAL 5S RNA AND 5.8S RNA		COLUMBUS	OHIO					
5	R01 GM29338-02	SCHURR, J MICHAEL	UNIVERSITY OF WASHINGTON		82	06-83	1	BBCA	55,010	69,633
	21100	FLUCTUATIONS AND DYNAMICS OF DNA		SEATTLE	WASHINGTON					
5	R01 GM29374-02	TURNER, DOUGLAS H	UNIVERSITY OF ROCHESTER		82	06-83	1	BBCA	18,466	29,574
	21100	FLUORESCENCE DETECTED CD STUDIES OF NUCLEIC ACIDS		ROCHESTER	NEW YORK					
5	R01 GM29690-02	STELLWAGEN, NANCY C	UNIVERSITY OF IOWA		82	06-83	1	BBCA	45,865	63,294
	21100	ELECTRIC BIREFRINGENCE OF DNA RESTRICTION FRAGMENTS		IOWA CITY	IOWA					
5	R01 GM29778-02	LEVY, GEORGE C	SYRACUSE UNIVERSITY AT SYRACUSE		82	06-83	0	BBCA	36,654	58,280
	21100	13C AND OTHER NUCLEI NMR OF DNA AND DNA INTERACTIONS		SYRACUSE	NEW YORK					
9	R01 GM29787-11	SARMA, RAMASWAMY H	STATE UNIVERSITY OF NEW YORK AT ALBANY		82	08-83	4	BBCA	57,235	75,321
	21100	MAGNETIC RESONANCE STUDIES OF BIOLOGICAL INTERACTIONS		ALBANY	NEW YORK					
5	R01 GM29828-02	HARPST, JERRY A	CASE WESTERN RESERVE UNIVERSITY		82	03-83	1	BBCA	53,395	78,872
	21100	NUCLEOPROTEIN COMPLEXES FROM ADENOVIRUS		CLEVELAND	OHIO					
5	R01 GM30032-02	SOBELL, HENRY M	UNIVERSITY OF ROCHESTER		82	07-83	1	SSS	128,389	223,397
	21100	DRUG-NUCLEIC ACID CRYSTALLINE COMPLEXES		ROCHESTER	NEW YORK					
1	R01 GM30284-01	HANLON, M SUE	UNIVERSITY OF ILLINOIS MEDICAL CENTER		82	07-83	1	BBCA	35,195	55,608
	21100	RAMAN SPECTRAL STUDIES OF DNA-AMINE COVALENT COMPLEXES		CHICAGO	ILLINOIS					
5	R01 GM30395-02	ITAKURA, KEIICHI	CITY OF HOPE RESEARCH INSTITUTE		82	05-83	1	MBC	63,940	105,565
	21100	PEPTIDE HORMONE PRODUCTION IN E COLI		DUARTE	CALIFORNIA					
1	R01 GM30452-01	ROSSKY, PETER J	UNIVERSITY OF TEXAS AUSTIN		82	04-83	2	BBCA	37,523	50,656
	21100	IONIC DISTRIBUTIONS IN POLYNUCLEOTIDE SOLUTIONS		AUSTIN	TEXAS					
5	R01 GM30543-02	DICKERSON, RICHARD E	UNIVERSITY OF CALIFORNIA LOS ANGELES		82	08-83	1	BBCA	121,415	167,242
	21100	STRUCTURES AND INTERACTIONS OF DNA AND PROTEINS		LOS ANGELES	CALIFORNIA					
3	R01 GM30543-02S1	DICKERSON, RICHARD E	UNIVERSITY OF CALIFORNIA LOS ANGELES		82	08-83	1	BBCA	20,225	28,052
	21100	STRUCTURES AND INTERACTIONS OF DNA AND PROTEINS		LOS ANGELES	CALIFORNIA					
1	R01 GM30562-01	GERLT, JOHN A	YALE UNIVERSITY		82	08-83	2	BBCA	43,059	70,299
	21100	31P AND 170 NMR STUDIES OF OLIGONUCLEOTIDE CONFORMATION		NEW HAVEN	CONNECTICUT					
1	R01 GM30789-01	AUSTIN, ROBERT H	PRINCETON UNIVERSITY		82	06-83	2	BBCA	44,662	68,766
	21100	TRIPLET ANISOTROPY DECAY STUDIES OF DNA MOTION		PRINCETON	NEW JERSEY					

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MOLECULAR AND MEDICAL GENETICS SECTION										
		PHYSICAL AND ORGANIC CHEMISTRY OF NUCLEIC ACIDS								
1	R01 GM30894-01 21100	TAKEDA, YOSHINORI STUDY ON CRO REPRESSOR--OPERATOR INTERACTION	UNIVERSITY OF MARYLAND BALT CO CAMPUS	CATONSVILLE	82 MARYLAND	06-83	2	MG	58,848	68,548
1	R01 GM31215-01 21100	SHINER, CHRISTOPHER S A NEW CLASS OF CHIRAL BORANES; SYNTHESIS OF RIFAMYCINS	UNIVERSITY OF COLORADO AT BOULDER	BOULDER	82 COLORADO	08-83	2	MCHA	44,385	60,511
9	R01 GM31616-04 21100	KIM, SUNG-HOU CRYSTALLINE COMPLEXES OF DNA WITH OTHER MOLECULES	UNIVERSITY OF CALIFORNIA BERKELEY	BERKELEY	82 CALIFORNIA	06-83	4	BBCA	46,242	64,779
1	R01 GM31674-01 21100	EDEN, DON STRUCTURE AND ENVIRONMENT OF NUCLEIC ACIDS IN SOLUTION	SAN FRANCISCO STATE UNIVERSITY	SAN FRANCISCO	82 CALIFORNIA	06-83	2	BBCA	82,019	100,201
									0	0
									0	0
									4,897,804	6,967,255
									0	0
									4,897,804	6,967,255

**	0	*CENTERS (P50)
**	0	PROGRAM PROJECTS (P01)
**	84	REGULAR PROJECTS (R01)
**	0	ALL OTHERS (P30, P41, R13, R23, R25)
**	84	TOTALS

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MOLECULAR AND MEDICAL GENETICS SECTION								
		REPLICATION, RECOMBINATION AND REPAIR OF DNA						
5	R01 GM06196-24	LEHMAN, I ROBERT	STANFORD UNIVERSITY		82	08-83	1	PC
	21200	DNA REPLICATION IN PRO- AND EUKARYOTES		STANFORD	CALIFORNIA		156,038	256,607
5	R01 GM07581-22	KORNBERG, ARTHUR	STANFORD UNIVERSITY		82	08-83	0	BIO
	21200	MECHANISM AND CONTROL OF DNA REPLICATION		STANFORD	CALIFORNIA		225,851	374,585
5	R01 GM13221-18	MOSIG, GISELA	VANDERBILT UNIVERSITY		82	08-83	0	GEN
	21200	DNA REPLICATION AND RECOMBINATION IN BACTERIOPHAGE		NASHVILLE	TENNESSEE		93,945	148,537
5	R01 GM13344-17	HURWITZ, JERARD	YESHIVA UNIVERSITY		82	11-82	3	PC
	21200	STUDIES OF MACROMOLECULAR ALTERATION AND SYNTHESIS		NEW YORK	NEW YORK		138,756	258,086
3	R01 GM13344-17S1	HURWITZ, JERARD	YESHIVA UNIVERSITY		82	11-82	1	SSS
	21200	STUDIES ON PROCARYOTIC AND EUCARYOTIC DNA REPLICATION		NEW YORK	NEW YORK		21,710	40,381
5	R01 GM14108-17	GANESAN, ADAYAPALAM T	STANFORD UNIVERSITY		82	07-83	2	MG
	21200	DNA SYNTHESIS AND GENETIC RECOMBINATION IN B. SUBTILIS		STANFORD	CALIFORNIA		81,878	129,367
2	R01 GM14372-16	NOVICK, RICHARD P	PUBLIC HLTH RES INST OF THE CITY OF NY		82	11-82	4	MG
	AI 21200	MOLECULAR BIOLOGY OF BACTERIAL PLASMIDS		NEW YORK	NEW YORK		105,615	146,355
2	R01 GM14711-16	INMAN, ROSS B	UNIVERSITY OF WISCONSIN MADISON		82	12-82	4	MG
	21200	STRUCTURE AND REPLICATION OF DNA		MADISON	WISCONSIN		110,930	155,733
5	R01 GM16329-15	HILL, CHARLES W	PENNSYLVANIA STATE UNIV HERSHEY MED CTR		82	08-83	2	MG
	21200	GENETICS AND BIOCHEMISTRY OF MISSENSE SUPPRESSION		HERSHEY	PENNSYLVANIA		119,589	158,413
5	R01 GM17088-13	DRESSLER, DAVID H	HARVARD UNIVERSITY		82	11-82	3	MG
	21200	STUDIES ON DNA REPLICATION AND RECOMBINATION		CAMBRIDGE	MASSACHUSETTS		60,808	93,644
2	R01 GM17317-13	FOGEL, SEYMOUR	UNIVERSITY OF CALIFORNIA BERKELEY		82	04-83	4	GEN
	21200	RECOMBINATION--DNA SYNTHESIS AND DEVELOPMENT IN YEAST		BERKELEY	CALIFORNIA		86,932	112,734
5	R01 GM18012-08	YEH, YUN-CHI	UNIVERSITY OF ARKANSAS MED SCIENCES		80	03-83	0	MBC
	21200	BIOCHEMICAL AND GENETIC STUDIES OF DNA SYNTHESIS		LITTLE ROCK	ARKANSAS		45,492	60,401
5	R01 GM18375-11	WOLSTENHOLME, DAVID R	UNIVERSITY OF UTAH		81	08-83	0	CTY
	21200	STRUCTURE OF MITOCHONDRIAL DNA		SALT LAKE CITY	UTAH		96,106	139,354
2	R01 GM18649-24	BESSMAN, MAURICE J	JOHNS HOPKINS UNIVERSITY		82	11-82	4	PC
	21200	ENZYMATIC SYNTHESIS OF NUCLEOTIDES AND DNA		BALTIMORE	MARYLAND		77,484	115,726
5	R01 GM18842-10	KARAM, JIM D	MEDICAL UNIVERSITY OF SOUTH CAROLINA		82	03-83	1	EVR
	21200	GENETIC CONTROL OF PHAGE T4 DNA REPLICATION		CHARLESTON	SOUTH CAROLINA		52,185	67,587
5	R01 GM18973-11	BOTSTEIN, DAVID	MASSACHUSETTS INSTITUTE OF TECHNOLOGY		82	12-82	2	VR
	21200	MOLECULAR GENETICS WITH PHAGE P22		CAMBRIDGE	MASSACHUSETTS		51,228	74,850

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		MOLECULAR AND MEDICAL GENETICS SECTION REPLICATION, RECOMBINATION AND REPAIR OF DNA							
5	R01 GM19010-11 21200	GANESAN, ANN K DNA REPAIR IN ESCHERICHIA COLI AND BACILLUS SUBTILIS	STANFORD UNIVERSITY	STANFORD	82 CALIFORNIA	07-83	0	70,011	MBC 110,617
2	R01 GM19020-14 21200	LINN, STUART M IN VITRO RESTRICTION AND MODIFICATION OF PHAGE DNA	UNIVERSITY OF CALIFORNIA	BERKELEY BERKELEY	82 CALIFORNIA	12-82	4	93,627	MG 119,551
2	R01 GM19122-10A1 21200	MOSES, ROBB E MECHANISMS OF CHROMOSOME REPLICATION	BAYLOR COLLEGE OF MEDICINE	HOUSTON	82 TEXAS	08-83	2	69,746	BIO 91,183
5	R01 GM20373-08 21200	STAHL, FRANKLIN W RECOMBINATIONAL INTERMEDIATES IN PHAGE LAMBDA	UNIVERSITY OF OREGON	EUGENE	81 OREGON	06-83	0	52,839	VR 71,397
5	R01 GM21510-08 21200	NEWLON, CAROL S DNA REPLICATION IN SACCHAROMYCES CEREVISIAE	UNIVERSITY OF IOWA	IOWA CITY	82 IOWA	11-82	2	82,081	GEN 112,702
2	R01 GM21782-07 21200	HINKLE, DAVID C ENZYMATIC MECHANISM OF DNA REPLICATION	UNIVERSITY OF ROCHESTER	ROCHESTER	82 NEW YORK	05-83	4	65,027	BIO 110,927
5	R01 GM21812-08 21200	BLATTNER, FREDERICK R REGULATORY SITES IN PRO- AND EUKARYOTIC GENOMES	UNIVERSITY OF WISCONSIN MADISON	MADISON	82 WISCONSIN	01-83	2	171,290	MGN 239,206
5	R01 GM21839-08 21200	GRAY, HORACE B, JR NUCLEIC ACID MODIFICATION WITH SPECIFIC ENDONUCLEASES	UNIVERSITY OF HOUSTON AT HOUSTON	HOUSTON	82 TEXAS	03-83	1	59,906	BIO 77,878
5	R01 GM21872-08 21200	STUDIER, F WILLIAM REPLICATION OF T7 DNA	ASSOCIATED UNIV-BROOKHAVEN NATL LAB	UPTON	82 NEW YORK	01-83	0	50,504	VR 80,806
5	R01 GM21890-06 21200	SCOCCA, JOHN J DNA INTERACTIONS IN BACTERIAL TRANSFORMATION	JOHNS HOPKINS UNIVERSITY	BALTIMORE	82 MARYLAND	03-83	0	68,679	MBC 103,019
5	R01 GM21960-08 21200	HUANG, WAI M DNA INITIATION AND REPLICATION	UNIVERSITY OF UTAH	SALT LAKE CITY	82 UTAH	03-83	1	67,255	MG 96,620
5	R01 GM21978-06 21200	ZYSKIND, JUDITH W DNA INITIATION AND TERMINATION IN BACTERIA	UNIVERSITY OF CALIFORNIA SAN DIEGO	LA JOLLA	81 CALIFORNIA	09-82	0	53,012	MBY 69,446
2	R01 GM22092-07 21200	KOGOMA, TOKIO DNA REPLICATION IN E. COLI: REGULATORY MUTANTS	UNIVERSITY OF NEW MEXICO	ALBUQUERQUE ALBUQUERQUE	82 NEW MEXICO	02-83	2	61,040	MG 83,625
2	R01 GM22199-07 21200	AGARWAL, KAN L DNA-PROTEIN INTERACTION	UNIVERSITY OF CHICAGO	CHICAGO	82 ILLINOIS	03-83	3	73,920	PC 113,774
5	R01 GM22232-08 21200	CARROLL, DANA DEVELOPMENTAL CONTROL AND EVOLUTION OF 5S RNA GENES	UNIVERSITY OF UTAH	SALT LAKE CITY	82 UTAH	05-83	1	80,891	GEN 115,762
5	R01 GM22238-06 21200	FRALICK, JOE A CHROMOSOME REPLICATION IN ESCHERICHIA COLI	TEXAS TECH UNIVERSITY	LUBBOCK	82 TEXAS	08-83	0	33,837	MBC 43,388

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	MOLECULAR AND MEDICAL GENETICS SECTION REPLICATION, RECOMBINATION AND REPAIR OF DNA							
2	R01 GM22332-06A1 CA 21200	SCHILDKRAUT, CARL L DNA OF NORMAL AND MALIGNANT CELLS	YESHIVA UNIVERSITY	NEW YORK	82 NEW YORK	11-82	4 86,832	MBY 160,132
5	R01 GM22562-06 21200	COSLOY, SHARON D MOLECULAR MECHANISM OF RECOMBINATION OF E COLI K12	CITY COLLEGE OF NEW YORK	NEW YORK	82 NEW YORK	11-82	0 39,894	MBC 64,110
2	R01 GM22586-07 21200	HAYS, JOHN B DNA STRUCTURES WHICH STIMULATE GENETIC RECOMBINATION	UNIVERSITY OF MARYLAND BALT CO CAMPUS	CATONSVILLE	82 MARYLAND	08-83	4 109,593	MG 149,796
5	R01 GM22846-08 21200	GROSSMAN, LAWRENCE ENZYMATIC EXCISION AND REPAIR MECHANISM	JOHNS HOPKINS UNIVERSITY	BALTIMORE	82 MARYLAND	08-83	1 69,097	PC 103,646
5	R01 GM23016-07 21200	EPSTEIN, WOLFGANG FUNCTION OF THE RECA PROTEIN OF E. COLI	UNIVERSITY OF CHICAGO	CHICAGO	82 ILLINOIS	08-83	0 36,713	MG 58,015
5	R01 GM23224-07 21200	CHAMPOUX, JAMES J STRAND SEPARATION IN DNA REPLICATION	UNIVERSITY OF WASHINGTON	SEATTLE	82 WASHINGTON	07-83	0 69,680	GEN 93,031
5	R01 GM23443-06 21200	DUMAS, LAWRENCE B EUKARYOTIC CELL PROTEINS THAT INITIATE DNA SYSTHESIS	NORTHWESTERN UNIVERSITY	EVANSTON	82 ILLINOIS	12-82	2 92,500	MBY 125,408
5	R01 GM23451-05 21200	CHASE, JOHN W BIOCHEMICAL STUDIES OF E COLI EXONUCLEASE 7	YESHIVA UNIVERSITY	NEW YORK	82 NEW YORK	12-82	3 38,847	BIO 66,235
5	R01 GM23563-05 21200	HOSODA, JUNKO THE STRUCTURE OF HELIX DESTABILIZING PROTEIN	UNIVERSITY OF CALIFORNIA BERKELEY	BERKELEY	82 CALIFORNIA	03-83	1 65,647	BBCA 93,875
5	R01 GM23608-06 21200	MARSH, ROBERT C STRUCTURE OF CHROMOSOME REPLICATION ORIGINS	UNIVERSITY OF TEXAS DALLAS	RICHARDSON	82 TEXAS	12-82	2 46,164	MBC 62,321
5	R01 GM23638-05 21200	GOORHA, RAKESH M DNA REPLICATION OF FROG VIRUS 3	ST. JUDE CHILDREN'S RESEARCH HOSPITAL	MEMPHIS	82 TENNESSEE	06-83	0 65,760	VR 91,209
5	R01 GM23719-07 21200	MODRICH, PAUL L ENZYMATIC BASIS OF TYPE II RESTRICTION AND MODIFICATION	DUKE UNIVERSITY	DURHAM	82 NORTH CAROLINA	07-83	3 146,320	BIO 219,480
5	R01 GM23917-06 21200	GEORGOPOULOS, CONSTANTINE P BACTERIAL FUNCTIONS IN PHAGE DEVELOPMENT	UNIVERSITY OF UTAH	SALT LAKE CITY	82 UTAH	03-83	2 86,173	MBC 124,951
5	R01 GM23922-05 21200	BEREZNEY, RONALD NUCLEAR MATRIX STRUCTURE AND DNA REPLICATION	STATE UNIVERSITY OF NEW YORK AT BUFFALO	BUFFALO	82 NEW YORK	02-83	1 55,363	CTY 79,453
5	R01 GM24020-07 21200	ALBERTS, BRUCE M DNA-PROTEIN INTERACTIONS IN DNA-REPLICATION CONTROL	UNIVERSITY OF CALIFORNIA SAN FRANCISCO	SAN FRANCISCO	82 CALIFORNIA	08-83	1 143,794	PC 183,272
5	R01 GM24212-06 21200	POLISKY, BARRY A MOLECULAR BASIS OF UNCONTROLLED REPLICATION	INDIANA UNIVERSITY BLOOMINGTON	BLOOMINGTON	82 INDIANA	06-83	2 72,938	MG 102,889

TABLE-4 RESEARCH GRANTS ACTIVE AS OF 09-30-82 BY PROGRAM AREA AND GRANT NUMBER

T	GRANT NUMBER / PROG-AREA	INVESTIGATOR / PROJECT TITLE	GRANTEE INSTITUTION	CITY	STATE	FY	END-DATE	FUT-YRS AVAILABLE	DIRECT	IRG SUB DOLLARS TOTAL
MOLECULAR AND MEDICAL GENETICS SECTION										
		REPLICATION, RECOMBINATION AND REPAIR OF DNA								
5	R01 GM24391-06 21200	SINHA, NAVIN K IN VITRO ANALYSIS OF A DNA REPLICATION APPARATUS	RUTGERS THE STATE UNIV NEW BRUNSWICK	NEW BRUNSWICK	NEW JERSEY	82	07-83	0	54,188	MG 85,037
2	R01 GM24441-04 21200	BAMBARA, ROBERT A ENZYMATIC MECHANISMS OF DNA SYNTHESIS	UNIVERSITY OF ROCHESTER	ROCHESTER	NEW YORK	82	12-82	2	63,419	BIO 98,619
5	R01 GM24496-05 21200	MOUNT, DAVID W MECHANISM OF INDUCTION OF VIRAL AND CELLULAR FUNCTIONS	UNIVERSITY OF ARIZONA	TUCSON	ARIZONA	82	12-82	3	86,172	MG 122,366
5	R01 GM24544-06 21200	WANG, JAMES C PHYSICOCHEMICAL STUDIES OF NUCLEIC ACIDS	HARVARD UNIVERSITY	CAMBRIDGE	MASSACHUSETTS	82	06-83	2	125,954	MG 192,349
5	R01 GM24688-05 21200	BROWN, WILLIAM E STRUCTURAL STUDIES OF DNA POLYMERASE 1	CARNEGIE-MELLON UNIVERSITY	PITTSBURGH	PENNSYLVANIA	82	12-82	1	63,676	BIO 91,661
2	R01 GM24778-04A1 21200	FARBER, ROSANN A GENETIC STUDIES ON MUTATION IN NEAR-DIPLOID CELLS	UNIVERSITY OF CHICAGO	CHICAGO	ILLINOIS	82	08-83	2	60,000	MGN 98,744
5	R01 GM24915-21 21200	GOODGAL, SOL H TRANSFORMATION IN HAEMOPHILUS	UNIVERSITY OF PENNSYLVANIA	PHILADELPHIA	PENNSYLVANIA	82	06-83	2	82,337	MBC 134,231
2	R01 GM24950-07 21200	KOWALSKI, DAVID STUDY OF LIMITED ENZYMATIC CLEAVAGE OF NATIVE DNA	ROSWELL PARK MEMORIAL INSTITUTE	BUFFALO	NEW YORK	81	05-83	0	40,764	BIO 57,732
2	R01 GM25022-04 21200	SARKAR, NILIMA INVOLVEMENT OF RNA IN DNA SYNTHESIS	BOSTON BIOMEDICAL RESEARCH INSTITUTE	BOSTON	MASSACHUSETTS	82	03-83	2	54,248	BIO 77,770
5	R01 GM25457-05 21200	MC HENRY, CHARLES S REGULATION OF THE SYNTHESIS OF REPLICATION PROTEINS	UNIVERSITY OF TEXAS HLTH SCI CTR HOUSTON	HOUSTON	TEXAS	82	08-83	1	34,016	BIO 45,802
5	R01 GM25500-05 21200	DEPEW, RICHARD E BACTERIAL W PROTEINS: BIOCHEMISTRY AND GENETICS	NORTHEASTERN OHIO UNIVERSITIES COLL MED	ROOTSTOWN	OHIO	82	06-83	3	66,367	MG 98,715
5	R01 GM25508-05 21200	CAMPBELL, JUDITH L ENZYMATIC MECHANISMS OF DNA REPLICATION	CALIFORNIA INSTITUTE OF TECHNOLOGY	PASADENA	CALIFORNIA	82	08-83	3	64,814	MG 95,445
5	R01 GM25526-05 21200	BIRD, ROBERT E CONTROL OF PLASMID DNA REPLICATION IN E COLI	VANDERBILT UNIVERSITY	NASHVILLE	TENNESSEE	82	07-83	3	59,958	MG 93,543
2	R01 GM25530-04A1 21200	BEATTIE, KENNETH L A BIOCHEMICAL STUDY OF ERROR-PRONE DNA SYNTHESIS	BAYLOR COLLEGE OF MEDICINE	HOUSTON	TEXAS	82	06-83	2	95,994	MG 118,691
2	R01 GM25604-04 21200	KLINE, BRUCE C GENETICS OF PLASMID REPLICATION AND INCOMPATIBILITY	MAYO FOUNDATION	ROCHESTER	MINNESOTA	82	11-82	2	68,989	MG 88,304
2	R01 GM25621-04 21200	GUMPORT, RICHARD I STUDIES WITH T4 RNA LIGASE	UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN	URBANA	ILLINOIS	82	11-82	4	77,152	MG 101,453

T	GRANT NUMBER / PROG-AREA	INVESTIGATOR / PROJECT TITLE	GRANTEE INSTITUTION	CITY	FY / STATE	END-DATE	FUT-YRS AVAILABLE	IRG SUB DOLLARS DIRECT	TOTAL
		MOLECULAR AND MEDICAL GENETICS SECTION REPLICATION, RECOMBINATION AND REPAIR OF DNA							
5	R01 GM25671-05 21200	ROSENBERG, JOHN M STRUCTURE AND FUNCTION OF ECORI ENDONUCLEASE	UNIVERSITY OF PITTSBURGH	PITTSBURGH	82 PENNSYLVANIA	06-83	1	BBCA 53,899	81,146
5	R01 GM25948-03 21200	BREMER, HANS CONTROL OF DNA REPLICATION IN BACTERIA	UNIVERSITY OF TEXAS DALLAS	RICHARDSON	81 TEXAS	08-83	0	MBC 47,654	63,856
2	R01 GM26017-04 AI 21200	KOLODNER, RICHARD D ENZYMATIC MECHANISMS OF GENETIC RECOMBINATION	SIDNEY FARBER CANCER INSTITUTE	BOSTON	82 MASSACHUSETTS	11-82	4	MG 105,401	161,841
5	R01 GM26107-12 21200	OLIVERA, BALDOMERO M DISCONTINUOUS DNA SYNTHESIS IN VITRO	UNIVERSITY OF UTAH	SALT LAKE CITY	82 UTAH	04-83	1	PC 69,815	100,107
2	R01 GM26108-04 21200	HAMLIN, JOYCE L CONTROL OF EUKARYOTIC DNA SYNTHESIS	UNIVERSITY OF VIRGINIA CHARLOTTESVILLE	CHARLOTTESVILLE	82 VIRGINIA	11-82	2	SSS 83,594	120,311
5	R01 GM26183-03 21200	MOLINEUX, IAN J STUDIES OF DNA-BINDING PROTEINS AND T7 DNA SYNTHESIS	UNIVERSITY OF TEXAS AUSTIN	AUSTIN	81 TEXAS	03-83	0	MBC 52,361	68,980
5	R01 GM26333-03 21200	BERG, DOUGLAS E INITIATION OF DNA REPLICATION IN VITRO	WASHINGTON UNIVERSITY	SAINT LOUIS	81 MISSOURI	03-83	0	PC 56,879	87,612
5	R01 GM26355-04 21200	COHEN, STANLEY N REPLICATION AND TRANSFER OF BACTERIAL PLASMIDS	STANFORD UNIVERSITY	STANFORD	82 CALIFORNIA	06-83	1	MBC 98,734	156,000
5	R01 GM26399-03 21200	BOTT, KENNETH F CHARACTERIZATION OF THE B SUBTILIS CHROMOSOME ORIGIN	UNIVERSITY OF NORTH CAROLINA CHAPEL HILL	CHAPEL HILL	81 NORTH CAROLINA	07-83	0	MBC 36,914	50,740
2	R01 GM26422-04 21200	PORTER, RONALD D EFFECTS OF DNA SUBSTRATES ON RECOMBINATION IN E. COLI	PENNSYLVANIA STATE UNIVERSITY UNIV PARK	UNIVERSITY PARK	82 PENNSYLVANIA	03-83	2	MG 59,330	76,391
2	R01 GM26938-04 21200	ZAKIAN, VIRGINIA A DNA REPLICATION AND CHROMOSOME STRUCTURE IN YEAST	FRED HUTCHINSON CANCER RESEARCH CENTER	SEATTLE	82 WASHINGTON	06-83	2	GEN 102,000	112,138
5	R01 GM27103-03 21200	HOLLOMAN, WILLIAM K ENZYMOLOGY OF GENETIC RECOMBINATION	UNIVERSITY OF FLORIDA	GAINESVILLE	82 FLORIDA	12-82	0	GEN 52,917	76,412
5	R01 GM27111-03 21200	BENDER, ROBERT A CONTROL OF DNA REPLICATION IN CAULOBACTER DEVELOPMENT	UNIVERSITY OF MICHIGAN AT ANN ARBOR	ANN ARBOR	82 MICHIGAN	12-82	0	MBC 40,891	64,608
5	R01 GM27219-03 21200	BERNSTEIN, HARRIS DNA REPLICATION AND REPAIR IN PHAGE T4	UNIVERSITY OF ARIZONA	TUCSON	82 ARIZONA	11-82	0	MBC 58,748	84,010
5	R01 GM27242-03 21200	SALAS, MARGARITA DNA-PROTEIN COMPLEX OF BACILLUS SUBTILIS PHAGE 29	AUTONOMOUS UNIVERSITY OF MADRID	MADRID	82 SPAIN	12-82	0	MBC 34,771	34,771
5	R01 GM27608-14 21200	ENGLUND, PAUL T STRUCTURE AND SYNTHESIS OF DNA	JOHNS HOPKINS UNIVERSITY	BALTIMORE	82 MARYLAND	12-82	2	BIO 108,084	162,126

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MOLECULAR AND MEDICAL GENETICS SECTION										
		REPLICATION, RECOMBINATION AND REPAIR OF DNA								
5	R01 GM27701-03 21200	CHIRIKJIAN, JACK G SITE SPECIFIC ENDONUCLEASE CATALYSIS OF DNA	GEORGETOWN UNIVERSITY	WASHINGTON	82 DIST OF COL	03-83	2	44,471	BIO 63,207	
5	R01 GM27727-03 21200	IHLER, GARRET M MECHANISM OF DNA REPLICATION OF PHAGE LAMBDA	TEXAS AGRI AND MECH UNIV	COLLEGE STATION COLLEGE STATION	82 TEXAS	03-83	0	33,196	MBC 42,823	
5	R01 GM27731-03 21200	LIU, LEROY F FUNCTIONAL AND MECHANISTIC STUDIES OF DNA TOPOISOMERASES	JOHNS HOPKINS UNIVERSITY	BALTIMORE	82 MARYLAND	03-83	0	44,652	MBC 66,978	
5	R01 GM27862-03 21200	SZOSTAK, JACK W MECHANISMS OF SEQUENCE RECTIFICATION IN YEAST RDNA	SIDNEY FARBER CANCER INSTITUTE	BOSTON	82 MASSACHUSETTS	03-83	0	48,516	GEN 82,197	
5	R01 GM27949-30 21200	ROMAN, HERSCHEL L GENETIC INVESTIGATIONS IN YEAST--SACCHAROMYCES	UNIVERSITY OF WASHINGTON	SEATTLE	82 WASHINGTON	03-83	2	55,509	GEN 74,027	
5	R01 GM27997-03 21200	KUSHNER, SIDNEY R A BIOCHEMICAL ANALYSIS OF GENETIC RECOMBINATION	UNIVERSITY OF GEORGIA	ATHENS	82 GEORGIA	12-82	1	60,919	MG 83,885	
5	R01 GM28013-03 21200	ITO, JUNETSU REPLICATION OF LINEAR DNA MOLECULES	UNIVERSITY OF ARIZONA	TUCSON	82 ARIZONA	06-83	3	80,388	MG 107,800	
5	R01 GM28098-03 21200	HUBERMAN, JOEL A SOLUBLE PROTEINS OF MAMMALIAN DNA REPLICATION	ROSWELL PARK MEMORIAL INSTITUTE	BUFFALO	82 NEW YORK	06-83	0	89,417	MBY 128,681	
5	R01 GM28099-03 21200	JAZWINSKI, S MICHAL BIOCHEMICAL ANALYSIS OF CELL CYCLE CONTROLS	ROCKEFELLER UNIVERSITY	NEW YORK	82 NEW YORK	07-83	0	66,949	MBY 104,540	
5	R01 GM28113-03 21200	MASKER, WARREN E THE FIDELITY OF IN VITRO DNA REPAIR AND REPLICATION	OAK RIDGE NATIONAL LABORATORY	OAK RIDGE	82 TENNESSEE	08-83	0	57,112	MG 57,112	
5	R01 GM28133-03 21200	SUEOKA, NOBORU IN VITRO INITIATION OF BACILLUS SUBTILIS CHROMOSOME	UNIVERSITY OF COLORADO AT	BOULDER BOULDER	82 COLORADO	06-83	1	48,147	MG 67,358	
5	R01 GM28220-03 21200	STERNGLANZ, ROLF ISOLATION OF AN E. COLI DNA TOPOISOMERASE I MUTANT	STATE UNIVERSITY NEW YORK	STONY BROOK STONY BROOK	82 NEW YORK	06-83	0	41,102	MG 61,222	
5	R01 GM28369-02 21200	STAHL, FRANKLIN W GENETIC RECOMBINATION IN YEAST--A MOLECULAR APPROACH	UNIVERSITY OF OREGON	EUGENE	82 OREGON	01-83	1	58,019	GEN 78,074	
5	R01 GM28430-02 21200	EBERLE, HELEN I REGULATION OF DNA REPLICATION	UNIVERSITY OF ROCHESTER	ROCHESTER	82 NEW YORK	01-83	1	55,022	MG 95,738	
5	R01 GM28482-02 21200	GILL, D MICHAEL FUNCTION OF POLY (ADP-RIBOSE)	TUFTS UNIVERSITY	BOSTON	82 MASSACHUSETTS	12-82	3	54,933	MBY 85,021	
5	R01 GM28488-02 21200	STEWART, CHARLES R MECHANISM OF PHAGE DNA REPLICATION	RICE UNIVERSITY	HOUSTON	82 TEXAS	12-82	1	62,668	MG 85,855	

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MOLECULAR AND MEDICAL GENETICS SECTION								
REPLICATION, RECOMBINATION AND REPAIR OF DNA								
5 R01 GM28550-03	GRINDLEY, NIGEL D	YALE UNIVERSITY		82	04-83	0		MBC
21200	STRUCTURE AND FUNCTION OF E COLI PO1A GENE		NEW HAVEN	CONNECTICUT			59,994	94,791
5 R01 GM28709-02	LIVINGSTON, DENNIS M	UNIVERSITY OF MINNESOTA OF MNPLS-ST PAUL		82	01-83	1		GEN
21200	BIOCHEMISTRY OF GENETIC RECOMBINATION IN YEAST		MINNEAPOLIS	MINNESOTA			46,573	61,539
5 R01 GM28775-02	BROWN, NEAL C	UNIVERSITY OF MASSACHUSETTS MEDICAL SCH		82	06-83	3		BIO
21200	STRUCTURE AND FUNCTION OF ANIMAL CELL DNA POLYMERASE A		WORCESTER	MASSACHUSETTS			99,704	177,473
5 R01 GM28923-12	COX, EDWARD C	PRINCETON UNIVERSITY		82	07-83	0		MBC
21200	E COLI MUTATOR GENES		PRINCETON	NEW JERSEY			68,686	112,645
5 R01 GM29006-02	HSIEH, TAO-SHIH	DUKE UNIVERSITY		82	03-83	1		GEN
21200	DNA TOPOISOMERASE: FUNCTION AND MECHANISM		DURHAM	NORTH CAROLINA			58,620	87,630
5 R01 GM29091-02	TSENG, BEN Y	UNIVERSITY OF CALIFORNIA SAN DIEGO		82	05-83	1		MBY
21200	RNA PRIMING OF EUKARYOTE DNA SYNTHESIS		LA JOLLA	CALIFORNIA			64,088	83,955
5 R01 GM29172-02	MALONE, ROBERT E	LOYOLA UNIVERSITY MEDICAL CENTER		82	03-83	1		GEN
21200	ISOLATION & ANALYSIS OF RECOMBINATION GENES IN YEAST		MAYWOOD	ILLINOIS			91,264	125,273
5 R01 GM29207-02	ROSENBERG, JOHN M	UNIVERSITY OF PITTSBURGH		82	03-83	1		BBCA
21200	SEQUENCE SPECIFIC DNA PROTEIN INTERACTIONS		PITTSBURGH	PENNSYLVANIA			59,771	90,852
5 R01 GM29216-03	MISHRA, NAWIN C	UNIVERSITY OF SOUTH CAROLINA AT COLUMBIA		82	08-83	0		MGN
21200	CHARACTERIZATION OF MAMMALIAN DNA POLYMERASE MUTANTS		COLUMBIA	SOUTH CAROLINA			47,965	69,597
1 R01 GM29408-01A1	HARI, V	WAYNE STATE UNIVERSITY		82	08-83	3		MBC
21200	STRUCTURE AND REPLICATION OF POTYVIRUSES		DETROIT	MICHIGAN			46,872	64,634
7 R01 GM29463-01	STAMBROOK, PETER J	UNIVERSITY OF CINCINNATI		81	12-82	0		GEN
21200	STUDY OF MAMMALIAN GENES AND THEIR REPLICATION		CINCINNATI	OHIO			67,416	93,034
5 R01 GM29490-02	BENBOW, ROBERT M	JOHNS HOPKINS UNIVERSITY		82	07-83	3		CTY
21200	MOLECULAR MECHANISMS OF DNA REPLICATION IN XENOPUS LAEVI		BALTIMORE	MARYLAND			78,586	117,879
5 R01 GM29535-02	WECHSLER, JAMES A	PUBLIC HLTH RES INST OF THE CITY OF NY		82	12-82	1		MG
21200	CONTROL OF NORMAL AND ABNORMAL CHROMOSOME GROWTH		NEW YORK	NEW YORK			86,376	123,103
1 R01 GM29554-01	SEEMAN, NADRIAN C	STATE UNIVERSITY OF NEW YORK AT ALBANY		82	07-83	2		PC
21200	PHYSICAL CHEMISTRY OF RECOMBINATIONAL INTERMEDIATES		ALBANY	NEW YORK			47,957	66,808
5 R01 GM29558-02	MC ENTEE, KEVIN	UNIVERSITY OF CALIFORNIA LOS ANGELES		82	06-83	1		MG
21200	BIOCHEMISTRY OF RECA PROTEIN STRUCTURE, FUNCTION/CONTROL		LOS ANGELES	CALIFORNIA			75,705	102,112
1 R01 GM29686-01	HINKLE, DAVID C	UNIVERSITY OF ROCHESTER		82	01-83	2		BIO
21200	ENZYMATIC MECHANISM OF YEAST DNA REPLICATION		ROCHESTER	NEW YORK			50,242	82,385

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MOLECULAR AND MEDICAL GENETICS SECTION									
		REPLICATION, RECOMBINATION AND REPAIR OF DNA							
1	R01 GM29736-01 21200	HABER, JAMES E PHYSICAL MONITORING OF MEIOTIC DNA RECOMBINATION	BRANDEIS UNIVERSITY	WALTHAM	81 MASSACHUSETTS	03-83	2	25,838	GEN 41,858
1	R01 GM29988-01 21200	PTASHNE, MARK CARCINOGENS AND THE SOS RESPONSE	HARVARD UNIVERSITY	CAMBRIDGE	82 MASSACHUSETTS	07-83	2	93,941	MG 135,445
1	R01 GM30077-01 21200	HAYES, SIDNEY ANALYSIS OF THE LAMBDA REPLICATOR	UNIVERSITY OF SASKATCHEWAN	SASKATOON	82 CANADA	01-83	2	66,230	MG 66,230
1	R01 GM30191-01 21200	SPICER, ELEANOR K STRUCTURE AND EXPRESSION OF T4 DNA REPLICATION GENES	YALE UNIVERSITY	NEW HAVEN	82 CONNECTICUT	03-83	2	45,500	MG 71,890
1	R01 GM30415-01 21200	LINN, STUART M STUDIES OF DNA POLYMERASES	UNIVERSITY OF CALIFORNIA	BERKELEY BERKELEY	82 CALIFORNIA	05-83	4	82,160	PC 106,380
1	R01 GM30435-01 21200	TESSMAN, ETHEL S DNA REPLICATION IN E. COLI	PURDUE UNIVERSITY WEST LAFAYETTE	WEST LAFAYETTE	82 INDIANA	07-83	2	67,346	MG 93,884
1	R01 GM30488-01 AI 21200	RADDING, CHARLES M BACTERIOPHAGE RECOMBINATION PROTEINS	YALE UNIVERSITY	NEW HAVEN	82 CONNECTICUT	05-83	2	46,928	MG 71,536
1	R01 GM30498-01 21200	LOHMAN, TIMOTHY M DNA UNWINDING: THE ROLE OF E. COLI REP AND SSB PROTEINS	TEXAS AGRI AND MECH UNIV COLLEGE STATION	COLLEGE STATION	82 TEXAS	04-83	2	67,104	BBCA 79,106
7	R01 GM30553-01 21200	JOHNSON, PAUL H RESTRICTION ENDONUCLEASE MECHANISMS AND DNA STRUCTURE	SRI INTERNATIONAL	MENLO PARK	82 CALIFORNIA	12-82	0	76,189	BBCA 149,187
7	R01 GM30602-01 21200	SCOTT, JOHN F THE ENZYMOLOGY OF DNA REPLICATION IN YEAST	UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN	URBANA	81 ILLINOIS	07-83	0	61,108	MBY 87,561
1	R01 GM30892-01 21200	JONES, PETER A DNA METHYLATION AND DEMETHYLATION IN CYCLING CELLS	CHILDREN'S HOSPITAL OF LOS ANGELES	LOS ANGELES	82 CALIFORNIA	06-83	2	67,430	MBY 96,441
1	R01 GM31196-01 21200	MEYER, RALPH R E. COLI MUTANT DNA BINDING PROTEINS AND DNA METABOLISM	UNIVERSITY OF CINCINNATI	CINCINNATI	82 OHIO	08-83	2	63,067	MG 84,176
1	R01 GM31213-01 21200	BARTON, JACQUELINE K ROLE OF ZINC IN A DNA ENZYME	HUNTER COLLEGE	NEW YORK	82 NEW YORK	06-83	2	72,484	BMT 95,669
1	R01 GM31247-01 21200	BENBOW, ROBERT M DNA RECOMBINASE FROM OVARIES OF THE FROG, XENOPUS LAEVIS	JOHNS HOPKINS UNIVERSITY	BALTIMORE	82 MARYLAND	06-83	2	28,799	MBY 43,199
1	R01 GM31249-01 21200	INMAN, ROSS B REPLICATION OF DNA IN EUCARYOTES	UNIVERSITY OF WISCONSIN MADISON	MADISON	82 WISCONSIN	06-83	2	58,383	GEN 82,284
1	R01 GM31253-01 21200	SUBRAMANI, SURESH MECHANISMS FOR GENETIC RECOMBINATION IN MAMMALIAN CELLS	UNIVERSITY OF CALIFORNIA SAN DIEGO	LA JOLLA	82 CALIFORNIA	06-83	2	65,967	EVR 82,837

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	MOLECULAR AND MEDICAL GENETICS SECTION REPLICATION, RECOMBINATION AND REPAIR OF DNA								
9	R01 GM31452-04 21200	YOUNG, CHARLES S THE MECHANISMS OF ADENOVIRUS RECOMBINATION	COLUMBIA UNIVERSITY	NEW YORK	82 NEW YORK	04-83	2 64,565	VR 104,493	
7	R01 GM31655-01 21200	COZZARELLI, NICHOLAS R RNA LIGASE FUNCTION AND USE IN DNA SYNTHESIS	UNIVERSITY OF CALIFORNIA BERKELEY	BERKELEY	82 CALIFORNIA	02-83	1 29,000	PBC 41,151	
7	R01 GM31657-01 21200	COZZARELLI, NICHOLAS R ENZYMOLOGICAL AND GENETIC STUDIES OF DNA POLYMERASES	UNIVERSITY OF CALIFORNIA BERKELEY	BERKELEY	82 CALIFORNIA	06-83	2 91,378	MG 129,665	
1	R01 GM31685-01 21200	KHAN, SALEEM A PLASMID PT181 DNA REPLICATION IN STAPHYLOCOCCUS AUREUS	UNIVERSITY OF PITTSBURGH	PITTSBURGH	82 PENNSYLVANIA	06-83	2 73,501	MG 105,812	
7	R01 GM31693-01 21200	SMITH, GERALD R MOLECULAR ANALYSIS OF HOSTSPOTS OF GENETIC RECOMBINATION	FRED HUTCHINSON CANCER RESEARCH CENTER	SEATTLE	82 WASHINGTON	12-82	2 25,568	VR 28,756	
1	R01 GM31964-01 21200	MATSUMOTO, LLOYD H THE REPLICATION OF BOVINE SATELLITE DNA	RHODE ISLAND COLLEGE	PROVIDENCE	82 RHODE ISLAND	08-83	2 74,640	MBY 93,638	

**	0	*CENTERS (P50)	0	0
**	0	PROGRAM PROJECTS (P01)	0	0
**	134	REGULAR PROJECTS (R01)	9,361,532	13,581,021
**	0	ALL OTHERS (P30, P41, R13, R23, R25)	0	0
**	134	TOTALS	9,361,532	13,581,021

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MOLECULAR AND MEDICAL GENETICS SECTION										
MECHANISMS OF MUTAGENESIS										
5	R01 GM0[illegible]983-23 21250	DE MARS, ROBERT I GENETIC STUDIES WITH CULTIVATED MAMMALIAN CELLS	UNIVERSITY OF WISCONSIN MADISON	MADISON	82	WISCONSIN	04-83	0	117,682	MGN 165,588
5	R01 GM07816-23 21250	STRAUSS, BERNARD S STUDY MODE OF ACTION OF CHEMICAL MUTAGENS	UNIVERSITY OF CHICAGO	CHICAGO	82	ILLINOIS	11-82	1	81,616	GEN 126,997
5	R01 GM09901-21 21250	HANAWALT, PHILIP C REPLICATION AND REPAIR OF GENETIC MATERIAL	STANFORD UNIVERSITY	STANFORD	82	CALIFORNIA	06-83	3	99,839	RAD 157,746
5	R01 GM11014-22 21250	HOWARD-FLANDERS, PAUL CROSSLINKING OF NUCLEOPROTEINS BY RADIATION	YALE UNIVERSITY	NEW HAVEN	82	CONNECTICUT	11-82	3	68,545	RAD 105,604
5	R01 GM13557-16 21250	POWERS, EDWARD L PHYSICO-CHEMICAL STUDIES OF RADIATION EFFECTS IN CELLS	UNIVERSITY OF TEXAS AUSTIN	AUSTIN	82	TEXAS	03-83	3	85,332	RAD 114,148
5	R01 GM13631-17 21250	LEFEVRE, GEORGE, JR COMPARATIVE STUDIES ON INDUCED MUTATION IN DROSOPHILA	CALIFORNIA STATE UNIVERSITY NORTHRIDGE	NORTHRIDGE	82	CALIFORNIA	11-82	0	78,198	GEN 108,695
5	R01 GM15255-17 21250	MARGOLIN, PAUL MUTATION AND SUPPRESSOR STUDIES OF A BACTERIAL GENE	PUBLIC HLTH RES INST OF THE CITY OF NY	NEW YORK	82	NEW YORK	05-83	1	120,154	MG 168,597
5	R01 GM16059-12 21250	RUDNER, RIVKA MACROMOLECULAR ASPECTS OF SYNCHRONOUS CELL DIVISION	HUNTER COLLEGE	NEW YORK	81	NEW YORK	11-82	0	47,415	MBC 76,146
5	R01 GM16536-14 21250	HINTON, CLAUDE W CHROMOSOME BEHAVIOR IN DROSOPHILA	COLLEGE OF WOOSTER	WOOSTER	82	OHIO	12-82	2	15,062	GEN 22,387
5	R01 GM16547-17 21250	RUPERT, CLAUD S REPAIR OF RADIATION-DAMAGED NUCLEIC ACID	UNIVERSITY OF TEXAS DALLAS	RICHARDSON	82	TEXAS	03-83	0	87,366	RAD 117,944
5	R01 GM16620-13 21250	DEERING, REGINALD A DNA REPAIR IN SLIME MOLD	PENNSYLVANIA STATE UNIVERSITY UNIV PARK	UNIVERSITY PARK	82	PENNSYLVANIA	04-83	2	93,658	RAD 125,047
2	R01 GM19261-10A1 21250	PRAKASH, LOUISE REPAIR OF DNA DAMAGED BY UV IRRADIATION IN YEAST	UNIVERSITY OF ROCHESTER	ROCHESTER	82	NEW YORK	11-82	4	64,597	RAD 109,905
5	R01 GM20176-10 21250	SHAPIRO, ROBERT DAMAGED DNA: THE STRUCTURE OF DNA CROSS-LINKS	NEW YORK UNIVERSITY	NEW YORK	82	NEW YORK	08-83	0	53,260	BIO 78,225
5	R01 GM21095-08 21250	SMALL, GARY D DNA METABOLISM IN EUKARYOTES	UNIVERSITY OF SOUTH DAKOTA	VERMILLION	82	SOUTH DAKOTA	06-83	0	31,167	PC 41,254
5	R01 GM21422-07 21250	GOODMAN, MYRON F ERROR CORRECTION IN DNA SYNTHESIS: A BIOCHEMICAL STUDY	UNIVERSITY OF SOUTHERN CALIFORNIA	LOS ANGELES	82	CALIFORNIA	08-83	3	83,408	MG 126,554
5	R01 GM21788-08 21250	BOCKRATH, RICHARD C RADIATION INDUCED CELLULAR MUTAGENESIS AND DNA REPAIR	INDIANA UNIV-PURDUE UNIV AT INDIANAPOLIS	INDIANAPOLIS	82	INDIANA	01-83	1	43,403	RAD 62,060

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		MOLECULAR AND MEDICAL GENETICS SECTION MECHANISMS OF MUTAGENESIS							
5	R01 GM21858-08 21250	LAWRENCE, CHRISTOPHER W RADIATION MUTAGENESIS AND REPAIR IN SACCHAROMYCES	UNIVERSITY OF ROCHESTER	ROCHESTER	82 NEW YORK	01-83	3 101,624	RAD 152,436	
5	R01 GM24178-06 21250	LITTLE, JOHN W BIOCHEMICAL ANALYSIS OF THE E. COLI LEXA GENE PRODUCT	UNIVERSITY OF ARIZONA	TUCSON	82 ARIZONA	07-83	2 79,000	MG 106,612	
5	R01 GM24238-05 21250	WANG, SHIH Y CHEMICAL ANALYSIS OF NON-DIMERIC UV DAMAGE IN DNA	JOHNS HOPKINS UNIVERSITY	BALTIMORE	82 MARYLAND	03-83	2 49,858	BBCA 74,787	
5	R01 GM24711-05 21250	MOSES, ROBB E CELLULAR DNA REPAIR MECHANISMS AND MUTAGENESIS	BAYLOR COLLEGE OF MEDICINE	HOUSTON	82 TEXAS	07-83	3 64,558	CPA 87,799	
2	R01 GM24798-04 21250	TOPAL, MICHAEL D MOLECULAR BASIS OF ENVIRONMENTALLY INDUCED MUTATIONS	UNIVERSITY OF NORTH CAROLINA CHAPEL HILL	CHAPEL HILL	82 NORTH CAROLINA	03-83	4 66,306	CPA 87,613	
5	R01 GM25562-04 21250	BOYD, JAMES B DNA SYNTHESIS IN MUTAGEN-SENSITIVE DROSOPHILA STRAINS	UNIVERSITY OF CALIFORNIA DAVIS	DAVIS	82 CALIFORNIA	12-82	0 57,762	GEN 75,668	
5	R01 GM25921-03 21250	SIEGEL, ELI C GENETIC CONTROL OF MUTATION IN ESCHERICHIA COLI	TUFTS UNIVERSITY	MEDFORD	81 MASSACHUSETTS	12-82	0 45,445	MBC 69,424	
2	R01 GM26689-04 21250	CHAO, LEE RNA POLYMERASE MEDIATED MUTAGENESIS AND DNA REPAIR	MEDICAL UNIVERSITY OF SOUTH CAROLINA	CHARLESTON	82 SOUTH CAROLINA	08-83	2 54,998	MG 71,710	
5	R01 GM26986-03 21250	EHRLICH, MELANIE MUTAGENESIS AT 5-METHYLCYTOSINE RESIDUES IN DNA	TULANE UNIVERSITY OF LOUISIANA	NEW ORLEANS	81 LOUISIANA	08-83	0 35,096	BIO 46,947	
5	R01 GM27358-02 21250	DEUTSCH, WALTER A ALKYLATION DAMAGE AND ITS REPAIR IN DROSOPHILA	LOUISIANA STATE UNIV A&M COL BATON ROUGE	BATON ROUGE	82 LOUISIANA	01-83	1 35,659	BIO 44,074	
2	R01 GM27817-03 21250	LE CLERC, JOSEPH E MECHANISMS OF MUTAGENESIS DURING DNA REPLICATION	UNIVERSITY OF ROCHESTER	ROCHESTER	82 NEW YORK	03-83	2 50,440	MG 82,446	
5	R01 GM27819-02 21250	PERSON, STANLEY IN VITRO MUTAGENESIS OF DNA	PENNSYLVANIA STATE UNIVERSITY UNIV PARK	UNIVERSITY PARK	82 PENNSYLVANIA	12-82	1 58,947	MG 79,268	
5	R01 GM27839-03 21250	CHAE, CHI-BOM GLOBIN GENE BINDING NONHISTONE PROTEINS	UNIVERSITY OF NORTH CAROLINA CHAPEL HILL	CHAPEL HILL	82 NORTH CAROLINA	03-83	0 47,122	MBY 65,386	
5	R01 GM28297-03 21250	HUTCHINSON, FRANKLIN MECHANISMS OF MUTAGENESIS	YALE UNIVERSITY	NEW HAVEN	82 CONNECTICUT	07-83	0 61,451	MG 102,558	
5	R01 GM28351-02 21250	CALKINS, JOHN ACTION SPECTRA OF GENETIC TOXICITIES OF UV RADIATIONS	UNIVERSITY OF KENTUCKY	LEXINGTON	81 KENTUCKY	12-82	0 42,080	RAD 59,122	
5	R01 GM28634-02 21250	SINGER, BRITTA S DETERMINANTS OF MUTABILITY IN BACTERIOPHAGE T4	UNIVERSITY OF COLORADO AT BOULDER	BOULDER	82 COLORADO	01-83	1 57,438	GEN 80,126	

TABLE-4 RESEARCH GRANTS ACTIVE AS OF 09-30-82 BY PROGRAM AREA AND GRANT NUMBER

T	GRANT NUMBER / PROG-AREA	INVESTIGATOR / PROJECT TITLE	GRANTEE INSTITUTION	CITY	FY / STATE	END-DATE	FUT-YRS AVAILABLE	IRG / SUB	DOLLARS DIRECT	DOLLARS TOTAL
MOLECULAR AND MEDICAL GENETICS SECTION										
		MECHANISMS OF MUTAGENESIS								
5	R01 GM28910-02 21250	CAIRNS, JOHN SYSTEMS THAT PROJECT AGAINST MUTAGENESIS	HARVARD UNIVERSITY	BOSTON	82 MASSACHUSETTS	08-83	1	CPA	32,664	57,489
5	R01 GM28988-02 21250	WALKER, GRAHAM C CELLULAR RESPONSES TO DNA DAMAGE	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	CAMBRIDGE	82 MASSACHUSETTS	03-83	3	MG	61,280	97,492
1	R01 GM30330-01 21250	MARINUS, MARTIN G RELATIONSHIP OF THE DAM GENE AND DNA ADENINE METHYLASE	UNIVERSITY OF MASSACHUSETTS MEDICAL SCH	WORCESTER	82 MASSACHUSETTS	03-83	2	MG	61,890	101,468
1	R01 GM30590-01 21250	BEATTIE, KENNETH L THE ENZYMOLOGY OF MUTAGENESIS	BAYLOR COLLEGE OF MEDICINE	HOUSTON	82 TEXAS	04-83	4	MG	62,202	81,535
1	R01 GM30649-01 21250	SHORTLE, DAVID R SITE/SPECIFIC MUTAGENESIS OF CLONED GENES	STATE UNIVERSITY NEW YORK	STONY BROOK STONY BROOK	82 NEW YORK	04-83	2	MG	56,915	78,527
1	R01 GM31076-01 21250	DEIBEL, MARTIN R, JR TERMINAL TRANSFERASE ENZYMATIC	UNIVERSITY OF KENTUCKY AND ACTIVE SITE STUDIES	LEXINGTON	82 KENTUCKY	06-83	2	BIO	51,596	74,908
1	R01 GM31082-01 21250	AZIZ, SAMCAR STRUCTURE AND REGULATION OF E.	UNIVERSITY OF NORTH CAROLINA CHAPEL HILL COLI DNA PHOTOLYASE	CHAPEL HILL	82 NORTH CAROLINA	07-83	2	MG	98,609	124,740
1	R01 GM31139-01 21250	PTASHNE, MARK DNA-PROTEIN BINDING AND SITE-SPECIFIC	HARVARD UNIVERSITY MUTAGENESIS	CAMBRIDGE	82 MASSACHUSETTS	06-83	2	MG	51,534	91,811
1	R01 GM31788-01 21250	BHANOT, OPINDER S MOLECULAR MECHANISMS OF MUTATIONS BY AP-SITE	PUBLIC HLTH RES INST OF THE CITY OF NY	NEW YORK	82 NEW YORK	07-83	2	MG	90,088	125,675
									0	0
									0	0
									2,645,264	3,826,518
									0	0
									2,645,264	3,826,518

**	0	*CENTERS (P50)
**	0	PROGRAM PROJECTS (P01)
**	41	REGULAR PROJECTS (R01)
**	0	ALL OTHERS (P30, P41, R13, R23, R25)
**	41	TOTALS

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MOLECULAR AND MEDICAL GENETICS SECTION									
EXTRACHROMOSOMAL INHERITANCE									
5	R01 GM11726-19 / 21280	ATTARDI, GIUSEPPE GENE EXPRESSION AND CONTENT IN CELL DIFFERENTIATION	CALIFORNIA INSTITUTE OF TECHNOLOGY	PASADENA	82 / CALIFORNIA	12-82	1	240,278	GEN 354,171
5	R01 GM14358-16 / 21280	FREIFELDER, DAVID M PHYSICOCHEMICAL AND GENETIC STUDIES OF DNA FUNCTION	BRANDEIS UNIVERSITY	WALTHAM	82 / MASSACHUSETTS	11-82	0	45,952	MBC 74,442
5	R01 GM19398-09 / 21280	BRAMBL, ROBERT M MITOCHONDRIAL BIOGENESIS AND FUNGAL SPORE GERMINATION	UNIVERSITY OF MINNESOTA OF MNPLS-ST PAUL	MINNEAPOLIS	82 / MINNESOTA	05-83	0	43,046	MBC 58,543
5	R01 GM19427-11 / 21280	BOYNTON, JOHN E HEREDITARY CONTROL OF ORGANELLE STRUCTURE AND FUNCTION	DUKE UNIVERSITY	DURHAM	82 / NORTH CAROLINA	04-83	2	147,471	MBC 221,207
5	R01 GM19607-10 / 21280	BIRKY, C WILLIAM, JR MECHANISMS OF ORGANELLE TRANSMISSION GENETICS	OHIO STATE UNIVERSITY	COLUMBUS	82 / OHIO	07-83	1	89,175	GEN 122,170
5	R01 GM20470-10 / 21280	BOGORAD, LAWRENCE MOLECULAR MECHANISMS OF INTRACELLULAR INTEGRATION	HARVARD UNIVERSITY	CAMBRIDGE	82 / MASSACHUSETTS	05-83	0	66,856	MBY 102,958
2	R01 GM21351-09 / 21280	HALLICK, RICHARD B GENE EXPRESSION IN CELL ORGANELLES	UNIVERSITY OF COLORADO AT BOULDER	BOULDER	82 / COLORADO	06-83	4	62,244	MBY 84,107
5	R01 GM21873-08 / 21280	EISENSTADT, JEROME M CYTOPLASMIC INHERITANCE IN CULTURED MAMMALIAN CELLS	YALE UNIVERSITY	NEW HAVEN	82 / CONNECTICUT	01-83	2	139,690	MGN 220,710
5	R01 GM21948-06 / 21280	CUMMINGS, DONALD J REPLICATION, FUNCTION AND BIOGENESIS OF MITOCHONDRIA	UNIVERSITY OF COLORADO HLTH SCIENCES CTR	DENVER	81 / COLORADO	12-82	0	70,909	CTY 90,204
2	R01 GM22333-16 / 21280	SIMPSON, MELVIN V MITOCHONDRIA: NUCLEIC ACID SYNTHESIS AND ROLE OF DNA	STATE UNIVERSITY NEW YORK STONY BROOK	STONY BROOK	82 / NEW YORK	06-83	2	60,798	BIO 89,430
5	R01 GM22525-07 / 21280	BUTOW, RONALD A REGULATION OF MITOCHONDRIAL BIOGENESIS IN YEAST	UNIVERSITY OF TEXAS HLTH SCI CTR DALLAS	DALLAS	82 / TEXAS	04-83	1	55,166	MBY 74,750
2	R01 GM22597-07 / 21280	VAN TUYLE, GLENN C PACKAGING AND REPLICATION OF MITOCHONDRIAL DNA	VIRGINIA COMMONWEALTH UNIVERSITY	RICHMOND	82 / VIRGINIA	03-83	2	63,363	MBY 89,837
5	R01 GM22874-08 / 21280	SAGER, RUTH CYTOPLASMIC GENETIC CONTROL SYSTEMS	SIDNEY FARBER CANCER INSTITUTE	BOSTON	82 / MASSACHUSETTS	06-83	3	107,193	MBY 182,134
5	R01 GM22968-07 / 21280	SURZYCKI, STEFAN J TRANSCRIPTION OF CHLOROPLAST DNA OF C. REINHARDI	INDIANA UNIVERSITY BLOOMINGTON	BLOOMINGTON	82 / INDIANA	07-83	0	47,281	GEN 68,557
5	R01 GM23961-06 / 21280	LAMBOWITZ, ALAN M BIOGENESIS OF MITOCHONDRIA IN NEUROSPORA	ST. LOUIS UNIVERSITY	SAINT LOUIS	82 / MISSOURI	06-83	2	55,908	MBY 83,362
5	R01 GM24285-06 / 21280	WALLACE, DOUGLAS C MITOCHONDRIAL GENETICS AND NEOPLASTIC TRANSFORMATION	STANFORD UNIVERSITY	STANFORD	82 / CALIFORNIA	08-83	0	72,349	MGN 122,270

TABLE-4 RESEARCH GRANTS ACTIVE AS OF 09-30-82 BY PROGRAM AREA AND GRANT NUMBER

T	GRANT NUMBER / PROG-AREA	INVESTIGATOR / PROJECT TITLE	GRANTEE INSTITUTION	CITY	FY / STATE	END-DATE	FUT-YRS AVAILABLE	DOLLARS DIRECT	IRG SUB TOTAL
	MOLECULAR AND MEDICAL GENETICS SECTION								
	EXTRACHROMOSOMAL INHERITANCE								
2	R01 GM25522-04 21280	COHEN, SEYMOUR S POLYAMINES IN VIRUS INFECTION OF CHLOROPLASTS	STATE UNIVERSITY NEW YORK	STONY BROOK STONY BROOK	82 NEW YORK	08-83	2	63,870	MBC 93,202
5	R01 GM25565-05 21280	HELLING, ROBERT B CHLOROPLAST DNA FROM EUGLENA	UNIVERSITY OF MICHIGAN AT	ANN ARBOR ANN ARBOR	82 MICHIGAN	06-83	0	43,475	GEN 68,691
5	R01 GM26520-03 21280	WOLSTENHOLME, DAVID R VARIANTS OF RAT MITOCHONDRIAL DNA	UNIVERSITY OF UTAH	SALT LAKE CITY	81 UTAH	09-82	0	34,092	CTY 50,115
2	R01 GM26546-05 21280	GROSSMAN, LAWRENCE I GENES ON MITOCHONDRIAL DNA	UNIVERSITY OF MICHIGAN AT	ANN ARBOR ANN ARBOR	82 MICHIGAN	08-83	2	232,856	GEN 298,710
5	R01 GM26994-03 21280	SCHWARTZBACH, STEVEN D REGULATION OF ORGANELLE BIOGENESIS	UNIVERSITY OF NEBRASKA LINCOLN	LINCOLN	81 NEBRASKA	01-83	0	33,121	BIO 45,707
5	R01 GM26998-03 21280	GOLLUB, EDITH G HEME REGULATION OF MACROMOLECULAR CELL COMPONENTS	BARNARD COLLEGE	NEW YORK	82 NEW YORK	02-83	0	51,192	GEN 79,240
5	R01 GM27064-03 21280	SIEGEL, ALBERT MAPPING THE TOBACCO RATTLE VIRUS GENOME	WAYNE STATE UNIVERSITY	DETROIT	82 MICHIGAN	12-82	0	50,773	VR 71,132
5	R01 GM27077-03 21280	PLATE, CHARLES A GENETICS & BIOCHEMISTRY OF ENERGY COUPLING IN E COLI	NORTHWESTERN UNIVERSITY	CHICAGO	82 ILLINOIS	12-82	0	44,077	MBC 60,826
5	R01 GM27099-03 21280	YOUNG, RYLAND F CONTROL OF VIRUS-INDUCED CELL LYSIS	TEXAS AGRI AND MECH UNIV	COLLEGE STATION COLLEGE STATION	82 TEXAS	12-82	0	46,930	EVR 60,540
5	R01 GM27148-03 21280	BLUMENTHAL, THOMAS OVERLAPPING GENES OF RNA PHAGES	INDIANA UNIVERSITY BLOOMINGTON	BLOOMINGTON	82 INDIANA	11-82	0	41,434	VR 58,785
5	R01 GM27314-03 21280	SIMON, LEE D GENETIC CONTROL OF PROTEIN DEGRADATION	RUTGERS THE STATE UNIV NEW	BRUNSWICK NEW BRUNSWICK	82 NEW JERSEY	11-82	1	65,696	GEN 103,800
2	R01 GM27597-04 21280	MARTIN, NANCY C TRANSCRIPTION AND ORGANIZATION OF MITOCHONDRIAL GENES	UNIVERSITY OF TEXAS HLTH SCI CTR	DALLAS DALLAS	82 TEXAS	05-83	4	89,365	GEN 118,409
5	R01 GM27795-03 21280	LOCKER, JOSEPH ANALYSIS OF MTRNA AND ITS PROCESSING IN YEAST	UNIVERSITY OF CHICAGO	CHICAGO	82 ILLINOIS	04-83	0	53,610	MBY 82,805
5	R01 GM27860-04 21280	MATTOON, JAMES R GENETIC MODIFICATION OF MITOCHONDRIA	UNIVERSITY OF COLORADO AT	COLORADO SPGS COLORADO SPRINGS	82 COLORADO	08-83	2	69,883	PB 103,926
5	R01 GM28001-03 21280	SNYDER, LOREN R INTRACELLULAR DNA STRUCTURES AND TRANSCRIPTION	MICHIGAN STATE UNIVERSITY	EAST LANSING	82 MICHIGAN	07-83	0	66,838	MG 94,242
5	R01 GM28147-03 21280	LANSMAN, ROBERT A A GENETIC ANALYSIS OF MAMMALIAN MITOCHONDRIAL DNA	UNIVERSITY OF GEORGIA	ATHENS	82 GEORGIA	11-82	0	57,846	MGN 78,532

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MOLECULAR AND MEDICAL GENETICS SECTION									
EXTRACHROMOSOMAL INHERITANCE									
5	R01 GM28211-03	SUMMERS, ANNE O	UNIVERSITY OF GEORGIA		82	11-82	0		MBC
	21280	REGULATION AND STRUCTURE OF THE MER OPERON		ATHENS	GEORGIA			52,055	71,680
5	R01 GM28463-02	HALLICK, RICHARD B	UNIVERSITY OF COLORADO AT BOULDER		82	11-82	1		GEN
	21280	STRUCTURE AND ORGANIZATION OF CHLOROPLAST TRNA GENES		BOULDER	COLORADO			59,915	83,112
5	R01 GM28710-02	HOWELL, NEIL	SIDNEY FARBER CANCER INSTITUTE		82	12-82	1		MGN
	21280	MITOCHONDRIAL GENETICS OF MAMMALIAN CELLS		BOSTON	MASSACHUSETTS			53,954	87,533
5	R01 GM28924-03	GUINEY, DONALD G	UNIVERSITY OF CALIFORNIA SAN DIEGO		82	08-83	0		MG
	21280	MECHANISM OF PLASMID DNA TRANSFER IN BACTERIA		LA JOLLA	CALIFORNIA			46,565	61,647
5	R01 GM28925-03	MINKLEY, EDWIN G, JR	CARNEGIE-MELLON UNIVERSITY		82	07-83	0		MG
	21280	CONJUGAL TRANSFER OF PLASMIDS		PITTSBURGH	PENNSYLVANIA			65,961	101,690
5	R01 GM29001-02	MARGOLIASH, EMANUEL	NORTHWESTERN UNIVERSITY		82	03-83	1		BIO
	21280	CYTOCHROME C MECHANISMS BY RECOMBINANT DNA TECHNIQUES		EVANSTON	ILLINOIS			88,914	121,569
1	R01 GM29037-01A1	AVADHANI, NAVAYAN G	UNIVERSITY OF PENNSYLVANIA		82	04-83	3		PBC
	21280	MITOCHONDRIAL GENES AND PLASMIDS IN MAMMALIAN CELLS		PHILADELPHIA	PENNSYLVANIA			56,851	93,804
5	R01 GM29362-02	FOX, THOMAS D	CORNELL UNIVERSITY ITHACA		82	08-83	1		GEN
	21280	CODING AND REGULATION OF YEAST MITOCHONDRIAL GENES		ITHACA	NEW YORK			89,166	122,946
5	R01 GM29387-02	LEWIN, ALFRED S	INDIANA UNIVERSITY BLOOMINGTON		82	06-83	1		MBY
	21280	REGULATION OF MITOCHONDRIAL ASSEMBLY		BLOOMINGTON	INDIANA			69,263	98,136
1	R01 GM29478-01	HECKMAN, JOYCE E	INDIANA UNIVERSITY BLOOMINGTON		82	01-83	2		GEN
	21280	NUCLEAR GENES FOR MITOCHONDIAL PROTEINS IN NEUROSPORA		BLOOMINGTON	INDIANA			80,000	99,732
5	R01 GM29681-02	BOGENHAGEN, DANIEL F	STATE UNIVERSITY NEW YORK STONY BROOK		82	06-83	3		PC
	21280	GENETIC FUNCTIONS OF MAMMALIAN MITOCHONDRIAL DNA		STONY BROOK	NEW YORK			52,251	78,082
5	R01 GM29775-02	WALBOT, VIRGINIA E	STANFORD UNIVERSITY		82	12-82	0		GEN
	21280	VARIATION IN MITOCHONDRIAL GENOTYPE		STANFORD	CALIFORNIA			55,271	87,328
1	R01 GM29780-01A1	BREEN, GAIL A	UNIVERSITY OF TEXAS DALLAS		82	07-83	2		BIO 1
	21280	MAMMALIAN MUTANTS WITH DEFECTS IN COMPLEX I		RICHARDSON	TEXAS			75,520	93,202
1	R01 GM30183-01A1	BOGORAD, LAWRENCE	HARVARD UNIVERSITY		82	07-83	2		GEN
2	21280	ORGANELLE GENES AND GENE REGULATION		CAMBRIDGE	MASSACHUSETTS			78,981	116,501
1	R01 GM30726-01	CHUA, NAM-HAI	ROCKEFELLER UNIVERSITY		82	04-83	4		GEN
	21280	GENE STRUCTURE AND REGULATION		NEW YORK	NEW YORK			94,227	137,108
1	R01 GM32113-01	DALE, RODERIC	UNIVERSITY OF MINNESOTA OF MNPLS-ST PAUL		82	08-83	2		MBY
	21280	ORGANIZATION & EXPRESSION OF TOBACCO MITOCHONDRIAL GENOM		MINNEAPOLIS	MINNESOTA			70,647	98,199

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MOLECULAR AND MEDICAL GENETICS SECTION									
		EXTRACHROMOSOMAL INHERITANCE							
**	0	*CENTERS (P50)						0	0
**	0	PROGRAM PROJECTS (P01)						0	0
**	48	REGULAR PROJECTS (R01)						3,502,278	5,059,783
**	0	ALL OTHERS (P30, P41, R13, R23, R25)						0	0
**	48	TOTALS						3,502,278	5,059,783

T	GRANT NUMBER / PROG-AREA	INVESTIGATOR / PROJECT TITLE	GRANTEE INSTITUTION	CITY	STATE	FY	END-DATE	FUT-YRS AVAILABLE	IRG SUB DOLLARS DIRECT	TOTAL
		MOLECULAR AND MEDICAL GENETICS SECTION MECHANISM OF TRANSCRIPTION								
2	R01 GM12010-19 21310	CHAMBERLIN, MICHAEL J SELECTIVITY OF BACTERIAL TRANSCRIPTION	UNIVERSITY OF CALIFORNIA BERKELEY	BERKELEY	CALIFORNIA	82	03-83	4	155,800	MG 195,716
3	R01 GM12010-19S1 21310	CHAMBERLIN, MICHAEL J NIGMS SHARED INSTRUMENTATION GRANT	UNIVERSITY OF CALIFORNIA BERKELEY	BERKELEY	CALIFORNIA	82	03-83	2	175,090	SSS 179,768
2	R01 GM13435-16A1 21310	ORGEL, LESLIE E EVOLUTION OF GENETIC SPECIFICITY	SALK INSTITUTE FOR BIOLOGICAL STUDIES	LA JOLLA	CALIFORNIA	82	06-83	2	78,370	BNP 118,186
5	R01 GM18673-11 21310	KRAKOW, JOSEPH S RNA SYNTHESIS BY BACTERIAL RNA POLYMERASE	HUNTER COLLEGE	NEW YORK	NEW YORK	82	11-82	1	75,398	PC 121,760
2	R01 GM21783-08A1 AI 21310	MC ALLISTER, WILLIAM T REGULATION OF VIRAL GENE EXPRESSION	RUTGERS MEDICAL SCHOOL	PISCATAWAY	NEW JERSEY	82	06-83	4	53,433	MG 78,673
5	R01 GM22200-08 21310	BRUENN, JEREMY A SEQUENCING OF YEAST KILLER-FACTOR RNAS	STATE UNIVERSITY OF NEW YORK AT BUFFALO	BUFFALO	NEW YORK	82	04-83	2	59,439	MBC 88,624
2	R01 GM22441-07 21310	MATTHEWS, KATHLEEN S FLUORESCENCE AND PHYSICAL STUDIES OF REPRESSOR PROTEINS	RICE UNIVERSITY	HOUSTON	TEXAS	82	03-83	4	62,555	BBCA 84,960
5	R01 GM23456-05 21310	NISHIURA, JAMES T GENETICS AND BIOCHEMISTRY OF EUKARYOTIC RNA POLYMERASES	BROOKLYN COLLEGE	NEW YORK	NEW YORK	82	12-82	1	20,801	GEN 33,614
5	R01 GM23467-06 21310	RECORD, M THOMAS, JR ION EFFECTS ON INTERACTIONS OF RNA POLYMERASE & DNA	UNIVERSITY OF WISCONSIN MADISON	MADISON	WISCONSIN	82	12-82	0	64,356	BBCA 86,873
2	R01 GM23697-07 21310	WOODY, ROBERT W SPECTROSCOPIC STUDIES OF RNA POLYMERASE MECHANISM	COLORADO STATE UNIVERSITY	FORT COLLINS	COLORADO	82	05-83	2	61,610	BBCA 81,582
5	R01 GM24461-06 21310	GUTERMAN, SONIA K RHO PROTEIN INTERACTION WITH RNA AND RNA POLYMERASE	BOSTON UNIVERSITY	BOSTON	MASSACHUSETTS	82	03-83	0	49,986	MBC 77,328
2	R01 GM25909-04 21310	MEARES, CLAUDE F PHOTOCHEMICAL & SPECTROSCOPIC PROBES OF RNA POLYMERASE	UNIVERSITY OF CALIFORNIA DAVIS	DAVIS	CALIFORNIA	82	11-82	4	57,566	BMT 71,563
2	R01 GM26437-04 21310	BENNETT, GEORGE N STRUCTURE-FUNCTION STUDY OF BACTERIAL PROMOTERS	RICE UNIVERSITY	HOUSTON	TEXAS	82	03-83	2	74,715	MG 100,806
5	R01 GM26740-04 21310	ROSE, KATHLEEN M REGULATION OF RNA POLYMERASE I GENE EXPRESSION	PENNSYLVANIA STATE UNIV HERSHEY MED CTR	HERSHEY	PENNSYLVANIA	82	06-83	1	30,971	BIO 41,501
5	R01 GM27720-03 21310	SOLLNER-WEBB, BARBARA T TRANSCRIPTION OF XENOPUS RIBOSOMAL DNA	JOHNS HOPKINS UNIVERSITY	BALTIMORE	MARYLAND	82	03-83	0	42,368	MBY 63,552
5	R01 GM27765-03 21310	AEBI, UELI STRUCTURAL STUDIES OF RNA POLYMERASE FROM E. COLI	JOHNS HOPKINS UNIVERSITY	BALTIMORE	MARYLAND	82	03-83	0	56,475	MBY 82,513

TABLE-4 RESEARCH GRANTS ACTIVE AS OF 09-30-82 BY PROGRAM AREA AND

T	GRANT NUMBER / PROG-AREA	INVESTIGATOR / PROJECT TITLE	GRANTEE INSTITUTION	CITY	STATE	FY	END-DATE	FUT-YRS AVAILABLE	DIRECT	IRG SUB DOLLARS TOTAL
		MOLECULAR AND MEDICAL GENETICS SECTION MECHANISM OF TRANSCRIPTION								
	5 R01 GM27785-03 21310	HODO, HENRY G, III RNA POLYMERASE 2--STRUCTURE & CHEMICAL MODIFICATION	MEHARRY MEDICAL COLLEGE	NASHVILLE	TENNESSEE	82	07-83	0	38,356	BIO 49,728
	5 R01 GM27970-03 21310	MC GUIRE, PETER M CHARACTERIZATION OF PLACENTAL RNA POLYMERASE II	UNIVERSITY OF FLORIDA	GAINESVILLE	FLORIDA	82	08-83	0	34,051	BIO 48,410
	5 R01 GM28078-03 21310	GREENLEAF, ARNO L BIOCHEMICAL GENETICS OF DROSOPHILA RNA POLYMERASE II	DUKE UNIVERSITY	DURHAM	NORTH CAROLINA	82	06-83	2	86,786	GEN 127,731
	5 R01 GM29118-02 21310	JAEHNING, JUDITH A RECONSTRUCTION OF SPECIFIC TRANSCRIPTION IN YEAST	UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN	URBANA	ILLINOIS	82	03-83	1	51,124	GEN 71,953
	2 R01 GM29200-02A1 21310	WILLIAMS, LUTHER S REGULATIONS OF AMINOACYL-TRNA SYNTHETASE FORMATION	WASHINGTON UNIVERSITY	SAINT LOUIS	MISSOURI	82	03-83	4	86,117	BIO 123,719
	5 R01 GM29487-02 21310	LUSE, DONAL S CONTROL OF TRANSCRIPTION IN EUKARYOTIC CELLS	UNIVERSITY OF CINCINNATI	CINCINNATI	OHIO	82	06-83	1	72,004	MBY 100,206
	5 R01 GM30375-02 21310	MC CLURE, WILLIAM R MECHANISM AND REGULATION OF E COLI RNA POLYMERASE	CARNEGIE-MELLON UNIVERSITY	PITTSBURGH	PENNSYLVANIA	82	06-83	2	59,430	MG 88,487
	3 R01 GM30375-02S1 21310	MC CLURE, WILLIAM R MECHANISM AND REGULATION OF E COLI RNA POLYMERASE	CARNEGIE-MELLON UNIVERSITY	PITTSBURGH	PENNSYLVANIA	82	06-83	2	35,851	MG 55,569
	1 R01 GM30408-01 AI 21310	SONENSHEIN, ABRAHAM L INITIATION OF RNA SYNTHESIS	TUFTS UNIVERSITY	BOSTON	MASSACHUSETTS	82	04-83	2	53,874	MG 83,835
	1 R01 GM30607-01 21310	HOUGH, PAUL V IN VITRO TRANSCRIPTION BY RNA POLYMERASE II	ASSOCIATED UNIV-BROOKHAVEN NATL LAB	UPTON	NEW YORK	82	04-83	2	58,195	CTY 93,112
	1 R01 GM30781-01 21310	HEARST, JOHN E THE STRUCTURE OF RNA POLYMERASE TERNARY COMPLEXES	UNIVERSITY OF CALIFORNIA BERKELEY	BERKELEY	CALIFORNIA	82	07-83	2	8,150	BBCA 11,565
	1 R01 GM31073-01 21310	WEINER, ALAN M TRANSCRIPTION AND FUNCTION OF HUMAN SMALL NUCLEAR RNAS	YALE UNIVERSITY	NEW HAVEN	CONNECTICUT	82	06-83	2	56,987	MBY 94,888
	1 R01 GM31219-01 21310	WEIL, PETER A MOLECULAR CONTROL OF EUCARYOTIC TRANSCRIPTION	UNIVERSITY OF IOWA	IOWA CITY	IOWA	82	06-83	2	63,854	GEN 88,119

**	0	*CENTERS (P50)	0	0
**	0	PROGRAM PROJECTS (P01)	0	0
**	29	REGULAR PROJECTS (R01)	1,823,712	2,544,341
**	0	ALL OTHERS (P30, P41, R13, R23, R25)	0	0
**	29	TOTALS	1,823,712	2,544,341

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		MOLECULAR AND MEDICAL GENETICS SECTION MECHANISM AND CONTROL OF TRANSLATION AND ASSEMBLY							
5	R01 GM09042-20 21320	HOROWITZ, JACK STRUCTURAL BASIS OF RIBONUCLEIC ACID SPECIFICITY	IOWA STATE UNIVERSITY OF SCIENCE & TECH	AMES	82 IOWA	11-82	1	PC 54,270	72,722
5	R01 GM10791-20 21320	KELLER, ELIZABETH B THE BIOSYNTHESIS OF RNA'S: MECHANISMS AND CONTROLS	CORNELL UNIVERSITY ITHACA	ITHACA	82 NEW YORK	06-83	3	PC 91,851	126,218
5	R01 GM12053-18 21320	KAJI, AKIRA BIOCHEMICAL CONTROL OF MACROMOLECULAR SYNTHESIS	UNIVERSITY OF PENNSYLVANIA	PHILADELPHIA	82 PENNSYLVANIA	12-82	0	PC 44,436	71,598
5	R01 GM12607-18 21320	KONIGSBERG, WILLIAM H RELATION OF PROTEIN STRUCTURE TO BIOLOGICAL FUNCTION	YALE UNIVERSITY	NEW HAVEN	82 CONNECTICUT	12-82	2	PC 94,474	149,269
5	R01 GM12934-18 21320	HAYASHI, MASAKI SYNTHESIS OF INFECTIOUS BACTERIOPHAGE PARTICLES	UNIVERSITY OF CALIFORNIA SAN DIEGO	LA JOLLA	82 CALIFORNIA	04-83	0	PC 70,985	92,680
5	R01 GM13280-19 21320	DOERMANN, AUGUST H INVESTIGATION OF GENETIC PROBLEMS WITH BACTERIOPHAGES	UNIVERSITY OF WASHINGTON	SEATTLE	82 WASHINGTON	12-82	0	EVR 128,583	170,397
2	R01 GM13511-17 21320	GOLDBERG, EDWARD B VIRAL-HOST RECOGNITION AND PENETRATION	TUFTS UNIVERSITY	BOSTON	82 MASSACHUSETTS	11-82	4	MBC 92,850	144,447
5	R01 GM13626-16 21320	GALLANT, JONATHAN A CONTROL OF CELL GROWTH	UNIVERSITY OF WASHINGTON	SEATTLE	82 WASHINGTON	04-83	1	MBC 66,448	88,126
5	R01 GM13957-16 21320	MORRIS, DAVID R BIOSYNTHESIS AND BIOLOGICAL FUNCTION OF POLYAMINES	UNIVERSITY OF WASHINGTON	SEATTLE	82 WASHINGTON	04-83	0	PC 66,181	88,616
5	R01 GM14957-15 21320	DUBIN, DONALD T R-RNA & RIBOSOME SYNTHESIS IN BACTERIA & ANIMAL CELLS	RUTGERS MEDICAL SCHOOL	PISCATAWAY	82 NEW JERSEY	01-83	3	MBY 74,965	123,971
5	R01 GM15225-14 21320	SIGLER, PAUL B STRUCTURAL ANALYSIS OF BIOLOGICAL MACROMOLECULES	UNIVERSITY OF CHICAGO	CHICAGO	82 ILLINOIS	08-83	0	BBCA 82,905	136,052
5	R01 GM15399-14 21320	MAITRA, UMADAS ENZYMATIC SYNTHESIS OF BIOLOGICALLY ACTIVE MACROMOLECULE	YESHIVA UNIVERSITY	NEW YORK	82 NEW YORK	04-83	1	MBY 100,002	183,811
5	R01 GM15438-13 21320	O'BRIEN, THOMAS W CHARACTERIZATION OF MAMMALIAN MITOCHONDRIAL RIBOSOMES	UNIVERSITY OF FLORIDA	GAINESVILLE	81 FLORIDA	11-82	0	MBY 44,664	63,163
5	R01 GM15539-15 21320	SCHIMMEL, PAUL R INVESTIGATIONS OF REACTIONS OF PHYSIOLOGICAL IMPORTANCE	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	CAMBRIDGE	82 MASSACHUSETTS	05-83	1	BBCA 109,553	151,754
5	R01 GM16317-15 21320	DEUTSCHER, MURRAY P ENZYMOLOGY AND CONTROL OF AMINO ACID ACTIVATION	UNIVERSITY OF CONNECTICUT HEALTH CENTER	FARMINGTON	82 CONNECTICUT	08-83	1	PC 126,016	182,723
5	R01 GM16835-14 21320	DAVIS, BERNARD D MEMBRANE-ASSOCIATED RIBOSOMES AND PROTEIN SECRETION	HARVARD UNIVERSITY	BOSTON	82 MASSACHUSETTS	05-83	1	MBC 85,712	167,824

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		MOLECULAR AND MEDICAL GENETICS SECTION MECHANISM AND CONTROL OF TRANSLATION AND ASSEMBLY								
	5 R01 GM17020-14 21320	CHAMPE, SEWELL P GENETIC CONTROL OF DEVELOPMENT IN MODEL SYSTEMS	RUTGERS THE STATE UNIV NEW BRUNSWICK	NEW BRUNSWICK	NEW JERSEY	82	04-83	0	77,035	GEN 121,715
	5 R01 GM17129-12 21320	NOLLER, HARRY F, JR RIBOSOME STRUCTURE AND FUNCTION	UNIVERSITY OF CALIFORNIA SANTA CRUZ	SANTA CRUZ	CALIFORNIA	82	04-83	2	109,231	MBY 143,093
	5 R01 GM17151-13 21320	RAJBHANDARY, UTTAM L STRUCTURE AND FUNCTION OF TRANSFER RIBONUCLEIC ACIDS	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	CAMBRIDGE	MASSACHUSETTS	82	05-83	0	101,685	PC 171,298
	5 R01 GM17892-13 21320	NEIDHARDT, FREDERICK C REGULATION OF BACTERIAL METABOLISM	UNIVERSITY OF MICHIGAN AT ANN ARBOR	ANN ARBOR	MICHIGAN	82	08-83	0	78,960	MBC 124,757
	5 R01 GM17924-12 21320	TRAUT, ROBERT R RIBOSOME STRUCTURE AND FUNCTION	UNIVERSITY OF CALIFORNIA DAVIS	DAVIS	CALIFORNIA	82	04-83	1	105,209	PC 136,097
	5 R01 CM17980-13 21320	KING, JONATHAN A BACTERIOPHAGE ASSEMBLY AND ITS GENETIC CONTROL	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	CAMBRIDGE	MASSACHUSETTS	82	08-83	0	93,293	VR 141,339
	5 R01 GM18775-11 21320	RAVEL, JOANNE M FACTORS CONTROLLING PROTEIN SYNTHESIS	UNIVERSITY OF TEXAS AUSTIN	AUSTIN	TEXAS	82	03-83	3	64,192	MBY 86,344
	5 R01 GM18796-11 21320	GUPTA, NABA K GENETIC CODE, PROTEIN SYNTHESIS IN MAMMALIAN SYSTEMS	UNIVERSITY OF NEBRASKA LINCOLN	LINCOLN	NEBRASKA	82	11-82	0	50,556	BIO 69,767
	5 R01 GM19351-11 21320	FOURNIER, MAURILLE J, JR BIOSYNTHESIS OF TRANSFER RIBONUCLEIC ACID	UNIVERSITY OF MASSACHUSETTS AMHERST	AMHERST	MASSACHUSETTS	82	05-83	0	57,143	PC 82,311
	5 R01 GM19386-11 21320	COOPER, TERRANCE G SYNTHESIS AND ASSEMBLY OF ENZYMES IN EUCARYOTES	UNIVERSITY OF PITTSBURGH	PITTSBURGH	PENNSYLVANIA	82	04-83	2	82,798	PC 124,813
	5 R01 GM19422-11 21320	ALTMAN, SIDNEY TRNA: STUDIES OF PRECURSORS, MUTANTS, AND FUNCTION	YALE UNIVERSITY	NEW HAVEN	CONNECTICUT	82	08-83	1	85,161	MG 141,030
	5 R01 GM19506-09 21320	HAMPEL, ARNOLD E AMINOACYL-TRNA SYNTHETASES IN CHO CELLS	NORTHERN ILLINOIS UNIVERSITY	DE KALB	ILLINOIS	81	11-82	0	49,905	PC 69,972
	5 R01 GM19693-09 21320	SMITH, ISSAR REGULATORY MECHANISMS IN RIBOSOME BIOSYNTHESIS	PUBLIC HLTH RES INST OF THE CITY OF NY	NEW YORK	NEW YORK	82	05-83	1	69,535	MBC 96,863
	5 R01 GM19756-11 21320	DAHLBERG, ALBERT E POLYSOMES & SUBUNITS: STRUCTURE-FUNCTION RELATIONSHIPS	BROWN UNIVERSITY	PROVIDENCE	RHODE ISLAND	82	08-83	0	87,049	PC 143,631
	2 R01 GM19821-07 21320	APIRION, DAVID GENETICS AND BIOCHMEISTRY OF RNA PROCESSING IN E COLI	WASHINGTON UNIVERSITY	SAINT LOUIS	MISSOURI	82	11-82	2	148,652	SSS 228,774
	2 R01 GM19843-10 21320	CANTOR, CHARLES R STRUCTURAL ORGANIZATION OF RIBOSOMES AND LARGE RNAS	COLUMBIA UNIVERSITY	NEW YORK	NEW YORK	82	11-82	4	90,101	BBCA 147,359

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		MOLECULAR AND MEDICAL GENETICS SECTION							
		MECHANISM AND CONTROL OF TRANSLATION AND ASSEMBLY							
5	R01 GM19993-15	AMES, BRUCE N	UNIVERSITY OF CALIFORNIA BERKELEY			82	12-82	0	PC
	21320	REGULATION OF GENE FUNCTION AND PROTEIN SYNTHESIS		BERKELEY	CALIFORNIA			105,928	138,223
5	R01 GM20052-09	DELIHAS, NICHOLAS	STATE UNIVERSITY NEW YORK STONY BROOK			82	08-83	0	MBY
	21320	STRUCTURE AND FUNCTION OF 5S RNA IN SITU		STONY BROOK	NEW YORK			29,460	43,406
5	R01 GM20147-10	PACE, NORMAN R	NATIONAL JEWISH HOSPITAL & RESEARCH CTR			82	06-83	0	MBY
	21320	METABOLISM OF RNA IN PROKARYOTES AND EUKARYOTES		DENVER	COLORADO			133,521	192,512
2	R01 GM20261-09	GERBI, SUSAN A	BROWN UNIVERSITY			82	03-83	4	MBY
	21320	FINE STRUCTURE OF RIBOSOMAL RNA		PROVIDENCE	RHODE ISLAND			90,410	133,784
5	R01 GM20427-10	NOMURA, MASAYASU	UNIVERSITY OF WISCONSIN MADISON			82	05-83	0	GEN
	21320	GENETICS AND BIOCHEMISTRY OF RIBOSOME BIOSYNTHESIS		MADISON	WISCONSIN			181,964	255,827
2	R01 GM20606-09	ARONSON, ARTHUR I	PURDUE UNIVERSITY WEST LAFAYETTE			82	03-83	4	MBC
	21320	MORPHOGENETIC PROCESSES IN BACTERIAL SPORULATION		WEST LAFAYETTE	INDIANA			77,034	106,327
5	R01 GM20626-07	MENNINGER, JOHN R	UNIVERSITY OF IOWA			80	08-83	0	PC
	21320	CONTROL AND MECHANISM OF PROTEIN-CHAIN TERMINATION		IOWA CITY	IOWA			53,949	74,903
2	R01 GM20693-06	COOPER, TERRANCE G	UNIVERSITY OF PITTSBURGH			82	11-82	4	PC
	21320	GENETICS AND ISOLATION OF A EUCARYOTIC CONTROL PROTEIN		PITTSBURGH	PENNSYLVANIA			49,637	72,276
5	R01 GM20818-08	RHOADS, ROBERT E	UNIVERSITY OF KENTUCKY			81	11-82	0	PC
	21320	REGULATION OF OVALBUMIN SYNTHESIS IN CHICK OVIDUCT		LEXINGTON	KENTUCKY			68,999	96,944
5	R01 GM21119-09	GUTHRIE, CHRISTINE	UNIVERSITY OF CALIFORNIA SAN FRANCISCO			82	01-83	2	GEN
	21320	BIOSYNTHESIS OF TRANSFER RNAS		SAN FRANCISCO	CALIFORNIA			87,139	113,689
5	R01 GM21357-08	SCHLESSINGER, DAVID	WASHINGTON UNIVERSITY			82	11-82	3	MBY
	21320	PROCESSING & TURNOVER OF MAMMALIAN CELL RIBOSOMAL RNA		SAINT LOUIS	MISSOURI			72,668	112,635
5	R01 GM21359-07	BODLEY, JAMES W	UNIVERSITY OF MINNESOTA OF MNPLS-ST PAUL			82	12-82	0	PC
	21320	GUANINE NUCLEOTIDES AND PROTEIN CHAIN GROWTH		MINNEAPOLIS	MINNESOTA			66,496	90,075
5	R01 GM21424-08	TRAUGH, JOLINDA A	UNIVERSITY OF CALIFORNIA RIVERSIDE			82	06-83	0	MBY
	21320	EFFECTS OF RIBOSOME PHOSPHORYLATION ON TRANSLATION		RIVERSIDE	CALIFORNIA			61,453	83,995
5	R01 GM21499-08	MURGOLA, EMANUEL J	UNIVERSITY OF TEXAS SYSTEM CANCER CENTER			82	02-83	3	MG
	21320	MISSENSE SUPPRESSION AND MUTATIONALLY ALTERED TRNAS		HOUSTON	TEXAS			43,448	60,175
5	R01 GM21769-08	WOOL, IRA G	UNIVERSITY OF CHICAGO			82	01-83	2	PC
	21320	PROTEINS OF EUKARYOTIC RIBOSOMES		CHICAGO	ILLINOIS			122,746	192,711
5	R01 GM21975-06	CASJENS, SHERWOOD R	UNIVERSITY OF UTAH			81	10-82	0	VR
	21320	BACTERIOPHAGE P22 ASSEMBLY AND ITS GENETIC CONTROL		SALT LAKE CITY	UTAH			33,665	48,548

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		MOLECULAR AND MEDICAL GENETICS SECTION MECHANISM AND CONTROL OF TRANSLATION AND ASSEMBLY							
5	R01 GM21999-06 21320	WIBERG, JOHN S REGULATION OF PROTEIN SYNTHESIS BY BACTERIOPHAGE T4	UNIVERSITY OF ROCHESTER	ROCHESTER	82 NEW YORK	11-82	2	85,943	VR 141,806
5	R01 GM22030-07 21320	TAI, PHANG-CHENG THE FUNCTIONS OF RIBOSOME RELEASE FACTOR	HARVARD UNIVERSITY	BOSTON	82 MASSACHUSETTS	06-83	1	38,825	MBC 76,019
5	R01 GM22079-08 21320	GUPTA, NABA K PROTEIN SYNTHESIS INITIATION IN RED BLOOD CELLS	UNIVERSITY OF NEBRASKA LINCOLN	LINCOLN	82 NEBRASKA	04-83	3	65,205	BIO 89,983
5	R01 GM22135-08 21320	HERSHEY, JOHN W MECHANISM OF INITIATION OF PROTEIN BIOSYNTHESIS	UNIVERSITY OF CALIFORNIA DAVIS	DAVIS	82 CALIFORNIA	07-83	0	92,836	CTY 127,000
5	R01 GM22150-08 21320	KAHAN, LAWRENCE IMMUNOCHEMICAL ANALYSIS OF 30S RIBOSOME STRUCTURE	UNIVERSITY OF WISCONSIN MADISON	MADISON	82 WISCONSIN	04-83	0	47,300	PC 65,591
5	R01 GM22488-06 21320	RUSSELL, PETER J A RIBOSOME BIOSYNTHESIS MUTANT OF NEUROSPORA	REED COLLEGE	PORTLAND	82 OREGON	06-83	1	41,712	MBY 57,759
5	R01 GM22733-07 21320	SCANDALIOS, JOHN G CONTROL OF GENE EXPRESSION IN EUKARYOTE DEVELOPMENT	NORTH CAROLINA STATE UNIVERSITY RALEIGH	RALEIGH	82 NORTH CAROLINA	07-83	1	47,142	GEN 65,999
2	R01 GM22807-07 21320	ZIMMERMANN, ROBERT A PHOTOCHEMICAL PROBES OF RIBOSOME ARCHITECTURE	UNIVERSITY OF MASSACHUSETTS AMHERST	AMHERST	82 MASSACHUSETTS	03-83	3	78,188	BBCA 110,202
5	R01 GM22854-07 21320	SOLL, DIETER G TRANSFER RNA	YALE UNIVERSITY	NEW HAVEN	82 CONNECTICUT	02-83	3	205,704	BIO 314,838
5	R01 GM22962-05 21320	WONG, KIN-PING RIBOSOMAL PROTEINS, PROTEIN-RNA INTERACTION & FUNCTION	UNIVERSITY OF KANSAS COL HLTH SCI & HOSP	KANSAS CITY	81 KANSAS	12-82	0	48,350	BBCA 64,399
2	R01 GM23013-05A1 21320	ROUFA, DONALD J GENETICS OF THE MAMMALIAN 80S RIBOSOME	KANSAS STATE UNIVERSITY	MANHATTAN	82 KANSAS	07-83	2	65,750	MGN 85,939
5	R01 GM23037-05 21320	AGRIS, PAUL F TRANSFER RNA STRUCTURE DURING PROTEIN SYNTHESIS	UNIVERSITY OF MISSOURI COLUMBIA	COLUMBIA	82 MISSOURI	03-83	0	36,211	BBCA 49,066
5	R01 GM23045-07 21320	LEBHERZ, HERBERT G REGULATION OF INTRACELLULAR ENZYME CONCENTRATIONS	SAN DIEGO STATE UNIVERSITY	SAN DIEGO	82 CALIFORNIA	06-83	1	58,914	BIO 82,782
2	R01 GM23322-04 21320	O'BRIEN, THOMAS W IMMUNOCHEMISTRY OF MAMMALIAN MITOCHONDRIAL RIBOSOMES	UNIVERSITY OF FLORIDA	GAINESVILLE	82 FLORIDA	08-83	2	56,532	MBY 80,752
2	R01 GM23408-06 21320	ROTH, JOHN R TRANSFER RNA PRODUCTION AND ROLE IN GENE REGULATION	UNIVERSITY OF UTAH	SALT LAKE CITY	82 UTAH	12-82	4	114,000	MG 163,950
5	R01 GM23410-05 21320	CHOOI, YEAN W RIBOSOMAL TRANSCRIPTION UNITS IN DROSOPHILA MELANOGASTER	INDIANA UNIVERSITY BLOOMINGTON	BLOOMINGTON	82 INDIANA	06-83	3	68,549	MBY 97,146

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MOLECULAR AND MEDICAL GENETICS SECTION										
MECHANISM AND CONTROL OF TRANSLATION AND ASSEMBLY										
5	R01 GM23522-06 / 21320	GELBART, WILLIAM M / GENETIC CONTROL OF DROSOPHILA ACETYLCHOLINESTERASE	HARVARD UNIVERSITY	CAMBRIDGE	MASSACHUSETTS	82	12-83	0	43,464	GEN 64,420
5	R01 GM23549-06 / 21320	ROSBASH, MICHAEL M / ORGANIZATION OF YEAST RIBOSOMAL PROTEIN GENES	BRANDEIS UNIVERSITY	WALTHAM	MASSACHUSETTS	82	01-83	1	59,099	MBY 95,740
5	R01 GM23562-06 / 21320	SCHIMMEL, PAUL R / GENETIC APPROACHES TO PROTEIN-NUCLEIC ACIDS INTERACTIONS	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	CAMBRIDGE	MASSACHUSETTS	82	02-83	0	52,591	GEN 80,153
5	R01 GM23705-10 / 21320	SZER, WLODZIMIERZ / REGULATORY MECHANISMS IN PROTEIN BIOSYNTHESIS	NEW YORK UNIVERSITY	NEW YORK	NEW YORK	82	05-83	3	74,724	MBY 111,712
5	R01 GM23736-06 / 21320	FINNERTY, VICTORIA M / REGULATION OF GENE EXPRESSION IN DROSOPHILA	CLARK COLLEGE	ATLANTA	GEORGIA	82	03-83	1	79,222	GEN 118,333
5	R01 GM23853-06 / 21320	PAOLETTI, ENZO / VACCINIA RNA SYNTHESIS: A MODEL FOR MRNA BIOGENESIS	NEW YORK STATE DEPARTMENT OF HEALTH	ALBANY	NEW YORK	82	03-83	0	60,557	EVR 92,068
5	R01 GM23999-06 / 21320	SYPHERD, PAUL S / MODIFICATION OF ELONGATION FACTOR-1 DURING MORPHOGENESIS	UNIVERSITY OF CALIFORNIA IRVINE	IRVINE	CALIFORNIA	82	06-83	2	71,124	MBC 99,218
2	R01 GM24034-06 / 21320	LAKE, JAMES A / SPATIAL ARRANGEMENT OF FUNCTIONAL SITES IN RIBOSOMES	UNIVERSITY OF CALIFORNIA LOS ANGELES	LOS ANGELES	CALIFORNIA	82	11-82	4	89,895	MBY 112,923
2	R01 GM24109-06 / 21320	CRAVEN, GARY R / THE ASSEMBLY MECHANISM OF THE BACTERIAL RIBOSOME	UNIVERSITY OF WISCONSIN MADISON	MADISON	WISCONSIN	82	07-83	4	130,037	MBY 182,513
5	R01 GM24189-06 / 21320	LIEBMAN, SUSAN W / NONSENSE SUPPRESSION AND ANTISUPPRESSION IN YEAST	UNIVERSITY OF ILLINOIS CHICAGO CIRCLE	CHICAGO	ILLINOIS	82	07-83	2	37,365	GEN 56,421
5	R01 GM24330-05 / 21320	HATFIELD, G WESLEY / TRANSLATIONAL CONTROL OF TRANSCRIPTION TERMINATION	UNIVERSITY OF CALIFORNIA IRVINE	IRVINE	CALIFORNIA	82	11-82	3	78,431	BIO 102,745
5	R01 GM24361-05 / 21320	SADOWSKI, PAUL D / ASSEMBLY AND RECOMBINATION IN PROKARYOTES AND EUKARYOTES	UNIVERSITY OF TORONTO	TORONTO	CANADA	82	12-82	1	86,199	SSS 86,199
5	R01 GM24365-06 / 21320	SERWER, PHILIP / BIOPHYSICS AND GENETICS OF VIRAL DNA PACKAGING	UNIVERSITY OF TEXAS HLTH SCI CTR SAN ANT	SAN ANTONIO	TEXAS	82	06-83	0	54,155	MG 73,651
5	R01 GM24576-05 / 21320	ELSEVIERS, DIRK / ACCURACY IN GENE EXPRESSION	NEW YORK MEDICAL COLLEGE	VALHALLA	NEW YORK	82	12-82	1	48,412	MG 77,943
5	R01 GM24825-05 / 21320	LEVIN, DANIEL H / CONTROL OF PROTEIN SYNTHESIS BY DOUBLE-STRANDED RNA	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	CAMBRIDGE	MASSACHUSETTS	82	12-82	3	79,626	PC 128,219
5	R01 GM24872-06 / 21320	MEISLER, MIRIAM H / GENETIC REGULATION OF MOUSE ENZYMES	UNIVERSITY OF MICHIGAN AT ANN ARBOR	ANN ARBOR	MICHIGAN	82	05-83	3	72,133	MGN 113,970

TABLE-4 RESEARCH GRANTS ACTIVE AS OF 09-30-82 BY PROGRAM AREA AND GRANT NUMBER

T	GRANT NUMBER / PROG-AREA	INVESTIGATOR / PROJECT TITLE	GRANTEE INSTITUTION	CITY	STATE	FY	END-DATE	FUT-YRS AVAILABLE	DOLLARS DIRECT	IRG SUB / DOLLARS TOTAL
MOLECULAR AND MEDICAL GENETICS SECTION										
		MECHANISM AND CONTROL OF TRANSLATION AND ASSEMBLY								
	5 R01 GM24949-05 21320	GROSS, MARTIN TRANSLATIONAL CONTROL OF PROTEIN SYNTHESIS BY HEMIN	UNIVERSITY OF CHICAGO	CHICAGO	ILLINOIS	82	08-83	3	54,260	PBC 91,009
	5 R01 GM24963-05 21320	SPREMULLI, LINDA L MECHANISM OF PROTEIN BIOSYNTHESIS IN CHLOROPLASTS	UNIVERSITY OF NORTH CAROLINA CHAPEL HILL	CHAPEL HILL	NORTH CAROLINA	82	03-83	3	55,116	PC 76,150
	5 R01 GM24981-03 21320	HAMILTON, MARY G SUBFRACTIONATION OF RAT LIVER RIBOSOMAL SUBUNITS	SLOAN-KETTERING INSTITUTE FOR CANCER RES	NEW YORK	NEW YORK	81	12-82	0	45,805	BBCA 67,791
	2 R01 GM24983-04 21320	THOMPSON, ROBERT C ACCURACY OF PROTEIN BIOSYNTHESIS	TEMPLE UNIVERSITY	PHILADELPHIA	PENNSYLVANIA	82	04-83	4	69,426	PC 97,079
	2 R01 GM25119-06 21320	JEFFERY, WILLIAM R STRUCTURE AND FUNCTION OF MESSENGER RIBONUCLEOPROTEIN	UNIVERSITY OF TEXAS AUSTIN	AUSTIN	TEXAS	82	07-83	4	79,481	MBY 106,249
	5 R01 GM25168-05 21320	WILHELM, JAMES M PROTEIN SYNTHESIS ERRORS IN EUKARYOTIC CELLS	UNIVERSITY OF ROCHESTER	ROCHESTER	NEW YORK	82	03-83	3	70,702	GEN 112,836
	5 R01 GM25236-05 21320	STUBBS, GERALD J STRUCTURE AND ASSEMBLY OF TOBACCO MOSAIC VIRUS	BRANDEIS UNIVERSITY	WALTHAM	MASSACHUSETTS	82	03-83	1	71,897	BBCB 116,473
	5 R01 GM25254-13 21320	DUDOCK, BERNARD S SEQUENCE ANALYSIS OF BIOLOGICALLY ALTERED TRNA	STATE UNIVERSITY NEW YORK STONY BROOK	STONY BROOK	NEW YORK	82	12-82	0	49,167	PC 73,141
	5 R01 GM25261-04 21320	SCHMIDT, PAUL G NMR OF TRANSFER RNA	OKLAHOMA MEDICAL RESEARCH FOUNDATION	OKLAHOMA CITY	OKLAHOMA	81	03-83	0	26,913	BBCB 37,005
	2 R01 GM25434-04A1 21320	SLOBIN, LAWRENCE I CONTROL OF POLYPEPTIDE CHAIN ELONGATION IN EUCARYOTES	UNIVERSITY OF MISSISSIPPI MEDICAL CENTER	JACKSON	MISSISSIPPI	82	06-83	4	63,010	PC 82,955
	5 R01 GM25451-03 21320	WAHBA, ALBERT J PROTEIN SYNTHESIS IN PROKARYOTES AND EUKARYOTES	UNIVERSITY OF MISSISSIPPI MEDICAL CENTER	JACKSON	MISSISSIPPI	80	08-83	0	46,084	BIO 61,954
	2 R01 GM25512-04A1 21320	SCHWEIZER, MARTIN P CARBON-13 NMR STUDIES OF TRNA SYNTHETASE INTERACTIONS	UNIVERSITY OF UTAH	SALT LAKE CITY	UTAH	82	06-83	2	65,937	BBCA 88,166
	2 R01 GM25855-04 21320	PARKER, JACK M HIGH LEVEL MISTRANSLATION - PROKARYOTIC/EUKARYOTIC CELLS	SOUTHERN ILLINOIS UNIVERSITY CARBONDALE	CARBONDALE	ILLINOIS	82	05-83	3	74,381	MG 98,006
	2 R01 GM25874-04 21320	LINDQUIST, SUSAN L REGULATION OF GENE EXPRESSION IN DROSOPHILA	UNIVERSITY OF CHICAGO	CHICAGO	ILLINOIS	82	11-82	4	86,897	GEN 126,533
	5 R01 GM26038-03 21320	RICHARDSON, JOHN P ENZYMES OF NUCLEAR RNA METABOLISM	INDIANA UNIVERSITY BLOOMINGTON	BLOOMINGTON	INDIANA	81	04-83	0	31,271	BIO 43,477
	5 R01 GM26167-03 21320	LANKS, KARL W PROTEIN SYNTHESIS CONTROL IN NON-PROLIFERATING CELLS	DOWNSTATE MEDICAL CENTER	NEW YORK	NEW YORK	82	12-82	0	53,070	CTY 84,010

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MOLECULAR AND MEDICAL GENETICS SECTION											
MECHANISM AND CONTROL OF TRANSLATION AND ASSEMBLY											
2	R01 GM26217-04	CULBERTSON, MICHAEL R	UNIVERSITY OF WISCONSIN MADISON			82	03-83	4	GEN		
	21320	FRAMESHIFT SUPPRESSORS AND TRANSFER RNA IN YEAST		MADISON	WISCONSIN					72,232	99,574
2	R01 GM26494-04	JOHNSON, ARTHUR E	UNIVERSITY OF OKLAHOMA NORMAN			82	03-83	2	BBCA		
	21320	THE INTERACTION OF AA-TRNA WITH EF-TU AND RIBOSOMES		NORMAN	OKLAHOMA					76,555	99,427
5	R01 GM26517-03	SARKAR, NILIMA	BOSTON BIOMEDICAL RESEARCH INSTITUTE			81	12-82	0	MBC		
	21320	FUNCTION OF POLYADENYLATE SEQUENCES IN BACTERIAL RNA		BOSTON	MASSACHUSETTS					42,551	62,818
5	R01 GM26690-04	SYPHERD, PAUL S	UNIVERSITY OF CALIFORNIA IRVINE			82	07-83	0	GEN		
	21320	POST-TRANSCRIPTIONAL REGULATION OF GENE EXPRESSION		IRVINE	CALIFORNIA					68,977	96,223
5	R01 GM26796-03	MERRICK, WILLIAM C	CASE WESTERN RESERVE UNIVERSITY			81	03-83	0	PC		
	21320	MECHANISM OF PROTEIN SYNTHESIS INITIATION		CLEVELAND	OHIO					58,299	85,991
2	R01 GM26832-04	BODLEY, JAMES W	UNIVERSITY OF MINNESOTA OF MNPLS-ST PAUL			82	06-83	4	PC		
	AI 21320	AMINO ACID X--STRUCTURE/DISTR/BIOSYNTHESIS/FUNCTION		MINNEAPOLIS	MINNESOTA					65,436	88,226
2	R01 GM26937-04	BOURQUE, DON P	UNIVERSITY OF ARIZONA			82	08-83	4	CTY		
	21320	MOLECULAR BIOLOGY OF CHLOROPLAST RIBOSOMES		TUCSON	ARIZONA					83,049	112,318
5	R01 GM26985-03	KOZARICH, JOHN W	YALE UNIVERSITY			82	07-83	0	BIO		
	21320	CHEMISTRY AND BIOCHEMISTRY OF 7-METHYLGUANOSINE		NEW HAVEN	CONNECTICUT					47,240	78,323
5	R01 GM27139-03	MARTIN, TERENCE E	UNIVERSITY OF CHICAGO			82	06-83	0	MBY		
	21320	MESSENGER RNA: PROTEIN COMPLEXES AND PROTEIN SYNTHESIS		CHICAGO	ILLINOIS					47,777	79,018
5	R01 GM27143-03	GOLDSTEIN, RICHARD	HARVARD UNIVERSITY			82	11-82	0	VR		
	21320	MECHANISM OF THE SWITCH BETWEEN TWO CAPSID SIZES		BOSTON	MASSACHUSETTS					26,102	51,108
5	R01 GM27159-03	RECHSTEINER, MARTIN C	UNIVERSITY OF UTAH			82	12-82	2	CTY		
	21320	MICROINJECTION STUDIES ON PROTEIN DEGRADATION		SALT LAKE CITY	UTAH					54,533	79,073
3	R01 GM27159-03S1	RECHSTEINER, MARTIN C	UNIVERSITY OF UTAH			82	12-82	2	CTY		
	21320	MICROINJECTION STUDIES ON PROTEIN DEGRADATION		SALT LAKE CITY	UTAH					8,669	12,570
5	R01 GM27168-03	ROBERTSON, HUGH D	ROCKEFELLER UNIVERSITY			82	03-83	0	PBC		
	21320	RNA PROCESSING ENZYMES IN HELA CELLS		NEW YORK	NEW YORK					31,400	47,755
5	R01 GM27176-03	WISHNIA, ARNOLD	STATE UNIVERSITY NEW YORK STONY BROOK			82	12-82	0	BBCA		
	21320	PRESSURE-JUMP STUDIES OF RIBOSOMES		STONY BROOK	NEW YORK					42,701	63,177
5	R01 GM27201-03	HILL, WALTER E	UNIVERSITY OF MONTANA			82	12-82	0	BBCA		
	21320	PHYSICAL STUDIES OF RIBOSOMAL PROTEINS		MISSOULA	MONTANA					54,414	75,908
5	R01 GM27210-02	WU, JOSEPH M	NEW YORK MEDICAL COLLEGE			82	12-82	1	BIO		
	21320	TRANSLATIONAL CONTROL MECHANISMS		VALHALLA	NEW YORK					46,296	73,561

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		MOLECULAR AND MEDICAL GENETICS SECTION MECHANISM AND CONTROL OF TRANSLATION AND ASSEMBLY								
5	R01 GM27214-03 21320	MORRISON, MARCELLE R MESSENGER RNA STRUCTURE, METABOLISM AND FUNCTION	UNIVERSITY OF TEXAS HLTH SCI CTR DALLAS	DALLAS	82	TEXAS	12-82	0	40,938	PC 55,471
5	R01 GM27215-03 21320	KIRK, DAVID L ANALYSIS OF CONTROL GENE ACTION IN VOLVOX DEVELOPMENT	WASHINGTON UNIVERSITY	SAINT LOUIS	82	MISSOURI	12-82	0	62,340	CBY 96,627
5	R01 GM27230-03 21320	WINICOV, ILGA B RNA PHOSPHORYLATION ROLE IN EUCARYOTIC RNA PROCESSING	UNIVERSITY OF NEVADA RENO	RENO	82	NEVADA	06-83	0	32,844	MBY 45,982
5	R01 GM27235-03 21320	CASKEY, CHARLES T MAMMALIAN CELL PROTEIN SYNTHESIS MUTANTS	BAYLOR COLLEGE OF MEDICINE	HOUSTON	82	TEXAS	12-82	0	60,038	MBY 81,652
5	R01 GM27263-03 21320	NAKAMOTO, TOKUMASA SELECTION OF MRNA INITIATOR SITE IN BACTERIAL PROTEIN	UNIVERSITY OF CHICAGO	CHICAGO	82	ILLINOIS	11-82	0	68,285	MBC 107,207
5	R01 GM27365-03 21320	WU, RAY FUNCTION OF INTERVENING SEQUENCE IN YEAST TRNA GENE	CORNELL UNIVERSITY ITHACA	ITHACA	82	NEW YORK	11-82	0	54,218	PC 86,666
5	R01 GM27622-03 21320	CHAMPNEY, WILLIAM S PROTEIN SYNTHESIS MUTANTS OF E COLI	UNIVERSITY OF TEXAS SAN ANTONIO	SAN ANTONIO	81	TEXAS	06-83	0	47,668	MBC 65,586
5	R01 GM27624-03 21320	HAWTHORNE, DONALD C SUPPRESSOR GENES AND INTERSPECIFIC HYBRIDS OF YEAST	UNIVERSITY OF WASHINGTON	SEATTLE	82	WASHINGTON	07-83	0	48,640	GEN 65,178
5	R01 GM27692-02 21320	LOCKARD, RAYMOND E MESSENGER RNA STRUCTURE IN TRANSLATIONAL CONTROL	GEORGE WASHINGTON UNIVERSITY	WASHINGTON	82	DIST OF COL	11-82	1	58,709	CTY 90,388
5	R01 GM27707-03 21320	DANIEL, WILLIAM L GENETIC ANALYSIS OF ARYLSULFATASE B VARIATION	UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN	URBANA	82	ILLINOIS	03-83	0	20,151	MGN 28,695
5	R01 GM27711-03 21320	GOLDMAN, EMANUEL ANALYSIS OF TRNA CODING BY PROTEIN SYNTHESIS IN VITRO	UNIVERSITY OF MEDICINE & DENTISTRY OF NJ	NEWARK	82	NEW JERSEY	03-83	0	50,525	MBC 84,648
5	R01 GM27757-03 21320	JACOBSON, ALLAN S MESSENGER RNA METABOLISM IN DICTYOSTELIUM DISCOIDEUM	UNIVERSITY OF MASSACHUSETTS MEDICAL SCH	WORCESTER	82	MASSACHUSETTS	03-83	2	74,304	MBY 125,267
5	R01 GM27792-02 21320	CHATTERJEE, NANDO K NUCLEAR PROTEIN SYNTHESIS IN EUKARYOTIC CELLS	NEW YORK STATE DEPARTMENT OF HEALTH	ALBANY	82	NEW YORK	03-83	1	49,924	BIO 72,440
5	R01 GM27815-03 21320	HECHT, SIDNEY M NUCLEOTIDE REPLACEMENTS IN TRANSFER RNA	UNIVERSITY OF VIRGINIA CHARLOTTESVILLE	CHARLOTTESVILLE	82	VIRGINIA	03-83	0	50,742	PC 73,576
5	R01 GM27930-03 21320	HOPPER, ANITA K YEAST MUTANTS IN TRNA-TRANSCRIPTION AND MATURATION	PENNSYLVANIA STATE UNIV HERSHEY MED CTR	HERSHEY	81	PENNSYLVANIA	08-83	0	59,324	GEN 79,817
5	R01 GM27935-03 21320	GIACOMONI, DARIO CELLULAR DISCRIMINATION OF LIPOSOME-INSERTED MRNAS	UNIVERSITY OF ILLINOIS MEDICAL CENTER	CHICAGO	82	ILLINOIS	11-83	0	54,602	MBY 85,725

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MOLECULAR AND MEDICAL GENETICS SECTION												
MECHANISM AND CONTROL OF TRANSLATION AND ASSEMBLY												
5	R01 GM27999-03	MOLDAVE, KIVIE	UNIVERSITY OF CALIFORNIA IRVINE	IRVINE	CALIFORNIA	82	08-83	0	82,488	114,676	BIO	
	21320	GENETIC REGULATION OF TRANSLATION IN YEAST										
5	R01 GM28003-03	NOMURA, MASAYASU	UNIVERSITY OF WISCONSIN MADISON	MADISON	WISCONSIN	82	01-83	0	59,098	84,080	MBY	
	21320	RIBOSOME STRUCTURE AND FUNCTION										
5	R01 GM28100-03	DUBIN, DONALD T	RUTGERS MEDICAL SCHOOL	PISCATAWAY	NEW JERSEY	82	08-83	0	42,968	70,326	MBY	
	21320	TRANSFER RNA SEQUENCES FROM ANIMAL MITOCHONDRIA										
5	R01 GM28241-03	BENJAMIN, DAVID C	UNIVERSITY OF VIRGINIA CHARLOTTESVILLE	CHARLOTTESVILLE	VIRGINIA	82	07-83	2	62,810	91,075	MGN	
	21320	PROTEIN FOLDING: IMMUNOCHEMICAL AND GENETIC ANALYSES										
5	R01 GM28294-03	ROBERTSON, HUGH D	ROCKEFELLER UNIVERSITY	NEW YORK	NEW YORK	82	07-83	0	72,953	111,116	VR	
	21320	THE ROLE OF RNA IN THE REGULATION OF GENE EXPRESSION										
5	R01 GM28334-03	DURE, LEON S, III	UNIVERSITY OF GEORGIA	ATHENS	GEORGIA	82	06-83	3	62,975	85,386	MBY	
	21320	TRANSCRIPTION AND TRANSLATION IN A DEVELOPMENTAL SYSTEM										
5	R01 GM28354-03	REEVES, ROBERT H	FLORIDA STATE UNIVERSITY	TALLAHASSEE	FLORIDA	82	01-83	0	31,670	45,318	PC	
	21320	GENETICALLY ALTERED PROLINE TRANSFER RNAS										
5	R01 GM28481-02	CHANG, SIMON H	LOUISIANA STATE UNIV A&M COL BATON ROUGE	BATON ROUGE	LOUISIANA	82	12-82	1	30,377	40,401	PC	
	21320	ROLE OF TRANSFER RNA IN CELL DIFFERENTIATION										
5	R01 GM28605-02	KOEPPE, ROGER E, II	UNIVERSITY OF ARKANSAS AT FAYETTEVILLE	FAYETTEVILLE	ARKANSAS	82	11-82	1	29,192	39,309	PC	
	21320	MOLECULAR STUDIES OF PROTEIN-NUCLEIC ACID RECOGNITION										
5	R01 GM28685-02	GOLD, LAWRENCE M	UNIVERSITY OF COLORADO AT BOULDER	BOULDER	COLORADO	82	11-82	3	119,289	166,408	PC	
	21320	TRANSLATIONAL REGULATION: THE T4 RIIB CISTRON										
5	R01 GM28697-02	GREENBERG, JAY R	WORCESTER FDN FOR EXPER BIOLOGY	SHREWSBURY	MASSACHUSETTS	82	02-83	1	49,653	82,961	MBY	
	21320	MRNA-PROTEIN INTERACTIONS IN POLYRIBOSOMES										
1	R01 GM28744-01A1	HAGUE, DONALD R	UNIVERSITY OF OREGON	EUGENE	OREGON	82	07-83	2	42,149	56,327	PC	
	21320	REGULATION OF SYNTHESIS OF CO2-FIXING ENZYMES OF MAIZE										
5	R01 GM28755-02	GOLD, LAWRENCE M	UNIVERSITY OF COLORADO AT BOULDER	BOULDER	COLORADO	82	11-82	0	40,452	56,431	SSS	
	21320	NUCLEIC ACID SEQUENCE ANALYSIS										
5	R01 GM28772-15	MC LAUGHLIN, CALVIN S	UNIVERSITY OF CALIFORNIA IRVINE	IRVINE	CALIFORNIA	82	02-83	3	115,467	146,513	PC	
	21320	COMPARATIVE STRUCTURE AND FUNCTION OF RIBOSOMES										
5	R01 GM28820-02	KORNBERG, ROGER D	STANFORD UNIVERSITY	STANFORD	CALIFORNIA	82	02-83	1	81,677	127,942	MBY	
	21320	STRUCTURE AND PROCESSING OF NUCLEAR RIBONUCLEOPROTEINS										
5	R01 GM28927-03	TAI, PHANG-CHENG	HARVARD UNIVERSITY	BOSTON	MASSACHUSETTS	82	08-83	1	37,258	72,951	MBC	
	21320	SELECTIVE ACTIONS OF ANTIBIOTICS ON RIBOSOMES										

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	MOLECULAR AND MEDICAL GENETICS SECTION								
		MECHANISM AND CONTROL OF TRANSLATION AND ASSEMBLY							
5	R01 GM28952-02 21320	BERGET, PETER B GENETIC ANALYSIS OF STRUCTURE FORMATION	UNIVERSITY OF TEXAS HLTH SCI CTR HOUSTON	HOUSTON	82 TEXAS	03-83	1	52,921	MBC 71,359
5	R01 GM28985-02 21320	LOCKARD, RAYMOND E TOPOGRAPHY OF 18S RIBOSOMAL RNA IN THE 40S SUBUNIT	GEORGE WASHINGTON UNIVERSITY	WASHINGTON	82 DIST OF COL	03-83	1	49,767	MBY 78,599
5	R01 GM29048-02 21320	DRAPER, DAVID E RIBOSOMAL RNA STRUCTURE AND INTERACTIONS	JOHNS HOPKINS UNIVERSITY	BALTIMORE	82 MARYLAND	03-83	1	32,638	BBCA 48,199
5	R01 GM29124-02 21320	KEITH, JERRY M VIRAL /CELLULAR MRNA POST-TRANSCRIPTIONAL PROCESSING	NEW YORK UNIVERSITY	NEW YORK	82 NEW YORK	03-83	1	49,720	BIO 75,077
5	R01 GM29162-02 21320	EICHLER, DUANE C NUCLEOLAR RIBONUCLEASES IN RIBOSOMAL RNA PROCESSING	UNIVERSITY OF SOUTH FLORIDA	TAMPA	82 FLORIDA	03-83	1	38,916	BIO 58,763
1	R01 GM29165-01 21320	ERNST, VIVIAN G CONTROL OF TRANSLATION BY PROTEIN PHOSPHORYLATION	BRANDEIS UNIVERSITY	WALTHAM	82 MASSACHUSETTS	08-83	2	59,612	BIO 86,182
5	R01 GM29221-10 21320	WEBB, THOMAS E POST-TRANSCRIPTIONAL CONTROL IN EUKARYOTIC CELLS	OHIO STATE UNIVERSITY	COLUMBUS	82 OHIO	03-83	1	63,130	BIO 86,488
5	R01 GM29231-03 21320	VOLD, BARBARA S ROLE OF TRNA IN CELLULAR REGULATORY MECHANISMS	SRI INTERNATIONAL	MENLO PARK	82 CALIFORNIA	08-83	3	81,984	MG 161,721
7	R01 GM29240-01 21320	WILSON, G EDWIN, JR BINDING SITE STUDIES OF PROTEIN ELONGATION FACTORS	CLARKSON COLLEGE OF TECHNOLOGY	POTSDAM	80 NEW YORK	08-83	0	36,480	BBCA 52,858
2	R01 GM29265-02A1 21320	SCHWARTZ, IRA S RIBOSOME BINDING SITES FOR PROTEIN SYNTHESIS FACTORS	NEW YORK MEDICAL COLLEGE	VALHALLA	82 NEW YORK	07-83	2	73,576	PC 110,869
5	R01 GM29302-02 21320	CHIKARAISHI, DONA M POST-TRANSCRIPTIONAL CONTROL OF GENE EXPRESSION	NATIONAL JEWISH HOSPITAL & RESEARCH CTR	DENVER	82 COLORADO	11-82	0	61,031	MBY 83,977
5	R01 GM29495-02 21320	GALAU, GLENN A REGULATION OF SYNTHESIS OF A HORMONE INDUCED PROTEIN SET	UNIVERSITY OF GEORGIA	ATHENS	82 GEORGIA	06-83	1	33,713	MBY 46,144
5	R01 GM29532-02 21320	LIARAKOS, CHARLES D STRUCTURE OF ESTROGEN INDUCED HEN OVIDUCT MESSENGER RNAS	MAYO FOUNDATION	ROCHESTER	82 MINNESOTA	08-83	1	59,176	MBY 75,617
5	R01 GM29603-02 21320	ECCLESTON, JOHN F ENERGY TRANSDUCTION IN PROTEIN BIOSYNTHESIS	UNIVERSITY OF PENNSYLVANIA	PHILADELPHIA	82 PENNSYLVANIA	06-83	1	61,804	PC 101,977
5	R01 GM29713-02 21320	JONES, ELIZABETH W GENETIC ANALYSIS OF ENZYME PROCESSING & LOCALIZATION	CARNEGIE-MELLON UNIVERSITY	PITTSBURGH	82 PENNSYLVANIA	06-83	1	75,419	GEN 115,249
5	R01 GM29812-08 21320	MC CLOSKEY, JAMES A STRUCTURAL AND ANALYTICAL STUDIES OF NA CONSTITUENTS	UNIVERSITY OF UTAH	SALT LAKE CITY	82 UTAH	04-83	2	107,246	SSS 155,507

TABLE-4 RESEARCH GRANTS ACTIVE AS OF 09-30-82 BY PROGRAM AREA AND GRANT NUMBER

T	GRANT NUMBER / PROG-AREA	INVESTIGATOR / PROJECT TITLE	GRANTEE INSTITUTION	CITY	STATE	FY	END-DATE	FUT-YRS AVAILABLE	DOLLARS DIRECT	DOLLARS TOTAL	IRG	SUB
		MOLECULAR AND MEDICAL GENETICS SECTION MECHANISM AND CONTROL OF TRANSLATION AND ASSEMBLY										
1	R01 GM29986-01 21320	CHIKARAISHI, DONA M REGULATION OF MAMMALIAN RIBOSOMAL 45S RNA SYNTHESIS	NATIONAL JEWISH HOSPITAL & RESEARCH CTR	DENVER	COLORADO	82	08-83	2	47,975	65,390	MBY	
1	R01 GM30204-01 21320	KELLEMS, RODNEY E REGULATION OF MRNA METABOLISM IN ANIMAL CELLS	BAYLOR COLLEGE OF MEDICINE	HOUSTON	TEXAS	82	02-83	2	92,796	114,429	MBY	
5	R01 GM30228-02 21320	POYTON, ROBERT O PATHWAYS OF PROTEIN TRANSPORT INTO CELL ORGANELLES	UNIVERSITY OF COLORADO AT BOULDER	BOULDER	COLORADO	82	06-83	2	68,205	93,823	MBC	
5	R01 GM30400-02 21320	ROE, BRUCE A THE ROLE OF MODIFIED NUCLEOTIDES IN MAMMALIAN TRNA	UNIVERSITY OF OKLAHOMA NORMAN	NORMAN	OKLAHOMA	82	08-83	0	56,683	76,522	PC	
1	R01 GM30418-01 21320	UHLENBECK, OLKE C ANTICODON LOOP SUBSTITUTION IN TRNA	UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN	URBANA	ILLINOIS	82	04-83	2	54,134	73,313	BBCA	
1	R01 GM30443-01 21320	PELLEGRINI, MARIA C STRUCTURE-FUNCTION RELATIONSHIPS IN RIBOSOMES	UNIVERSITY OF SOUTHERN CALIFORNIA	LOS ANGELES	CALIFORNIA	82	04-83	2	61,180	82,193	MBY	
1	R13 GM30579-01 GM 21320	MATHEWS, MICHAEL B RNA PROCESSING MEETINGS	COLD SPRING HARBOR LABORATORY	COLD SPRING HARB	NEW YORK	82	03-83	0	5,000	5,000	SSS	
1	R01 GM30588-01 21320	JACOBSON, LEWIS A BIOCHEMISTRY OF TRANSLATION CONTROL IN E COLI	UNIVERSITY OF PITTSBURGH	PITTSBURGH	PENNSYLVANIA	82	03-83	1	35,079	50,460	MBC	
1	R01 GM30679-01 21320	LOFTFIELD, ROBERT B HOW POLYAMINES ENHANCE PRECISION OF AA-TRNA SYNTHESIS	UNIVERSITY OF NEW MEXICO ALBUQUERQUE	ALBUQUERQUE	NEW MEXICO	82	03-83	2	73,820	100,501	PC	
1	R01 GM30700-01 21320	WELLS, BARBARA D SPECTROSCOPIC STUDIES OF SOLUTION CONFORMATIONS OF TRNA	UNIVERSITY OF WISCONSIN MILWAUKEE	MILWAUKEE	WISCONSIN	82	04-83	2	76,391	94,611	BBCA	
1	R01 GM30800-01 21320	MILLER, DAVID L STRUCTURE & FUNCTION OF PEPTIDE CHAIN ELONGATION FACTOR	INSTITUTE FOR BASIC RES IN DEV DISABIL	NEW YORK	NEW YORK	82	08-83	3	65,576	89,885	MG	
1	R01 GM30881-01 21320	YARUS, MICHAEL J TRNA STRUCTURE/FUNCTION STUDIES VIA GENE CONSTRUCTION	UNIVERSITY OF COLORADO AT BOULDER	BOULDER	COLORADO	82	06-83	4	155,506	210,890	PC	
1	R01 GM31114-01 AM 21320	VOURNAKIS, JOHN N SECONDARY STRUCTURE AND PROCESSING OF PROKARYOTIC RNA	SYRACUSE UNIVERSITY AT SYRACUSE	SYRACUSE	NEW YORK	82	06-83	2	45,249	70,191	MG	
1	R01 GM31225-01 21320	OKARMA, THOMAS B RNA PROCESSING BY THE EXTRACTABLE NUCLEAR ANTIGEN	STANFORD UNIVERSITY	STANFORD	CALIFORNIA	82	06-83	2	71,322	112,689	BIO	1
1	R13 GM31250-01 GM 21320	BOTSTEIN, DAVID GORDON CONFERENCE ON BIOLOGICAL REGULATORY MECHANISMS	GORDON RESEARCH CONFERENCES	KINGSTON	RHODE ISLAND	82	05-83	0	2,000	2,000	CTY	
1	R01 GM31528-01 21320	NILSEN, TIMOTHY W 2',5'-OLIGO(A) AND NUCLEAR RNA METABOLISM	CASE WESTERN RESERVE UNIVERSITY	CLEVELAND	OHIO	82	07-83	2	42,991	62,186	MBY	

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MOLECULAR AND MEDICAL GENETICS SECTION										
		MECHANISM AND CONTROL OF TRANSLATION AND ASSEMBLY								
**	0	*CENTERS (P50)							0	0
**	0	PROGRAM PROJECTS (P01)							0	0
**	174	REGULAR PROJECTS (R01)							11,678,528	17,041,841
**	2	ALL OTHERS (P30, P41, R13, R23, R25)							7,000	7,000
**	176	TOTALS							11,685,528	17,048,841

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		MOLECULAR AND MEDICAL GENETICS SECTION HUMAN MEDICAL AND BEHAVIORAL GENETICS										
5	R01 GM10356-19 21400	AMOS, D BERNARD THE IMMUNOGENETICS OF MAN, MICE & VIRUSES	DUKE UNIVERSITY	DURHAM	NORTH CAROLINA	82	11-82	2	296,180		IMB	439,870
5	R01 GM10452-19 21400	KARLIN, SAMUEL STOCHASTIC MODELS IN MEDICINE AND BIOLOGY	STANFORD UNIVERSITY	STANFORD	CALIFORNIA	82	12-82	1	109,461		SSS	172,948
5	R01 GM15883-18 21400	PIOUS, DONALD A GENETIC STRUCTURE AND FUNCTION IN HUMAN CELLS	UNIVERSITY OF WASHINGTON	SEATTLE	WASHINGTON	82	01-83	0	90,923		GEN	121,746
5	R01 GM17173-13 21400	MORTON, NEWTON E A RESEARCH PROGRAM IN GENETIC EPIDEMIOLOGY	UNIVERSITY OF HAWAII AT MANOA	HONOLULU	HAWAII	82	02-83	2	170,717		SSS	239,004
5	R01 GM20467-10 21400	CAVALLI-SFORZA, LUIGI L HUMAN POPULATION GENETICS	STANFORD UNIVERSITY	STANFORD	CALIFORNIA	82	07-83	3	167,577		SSS	264,772
5	P01 GM21096-08 21400	SLY, WILLIAM S ENZYME THERAPY IN LYSOSOMAL STORAGE DISEASES	WASHINGTON UNIVERSITY	SAINT LOUIS	MISSOURI	82	05-83	0	310,953		SSS	478,952
5	R01 GM21473-08 21400	HALL, JEFFREY C NEUROGENETICS OF DROSOPHILA REPRODUCTIVE BEHAVIOR	BRANDEIS UNIVERSITY	WALTHAM	MASSACHUSETTS	82	11-82	0	45,201		GEN	71,056
5	P01 GM22167-08 21400	WITKOP, CARL J, JR ALBINISM	UNIVERSITY OF MINNESOTA OF MNPLS-ST PAUL	MINNEAPOLIS	MINNESOTA	82	08-83	0	160,290		SSS	222,803
2	R01 GM23200-07 21400	CARSON, DENNIS A ADENOSINE DEAMINASE DEFICIENCY: GENETICS AND IMMUNOLOGY	SCRIPPS CLINIC AND RESEARCH FOUNDATION	LA JOLLA	CALIFORNIA	82	06-83	4	88,432		MGN	145,824
5	R01 GM24663-05 21400	HORVITZ, HOWARD R GENETIC ANALYSIS OF NEMATODE EGG-LAYING	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	CAMBRIDGE	MASSACHUSETTS	82	12-82	3	50,149		GEN	65,689
5	R01 GM24736-05 21400	MURPHY, EDMOND A THEORETICAL ASPECTS OF CLINICAL GENETICS	JOHNS HOPKINS UNIVERSITY	BALTIMORE	MARYLAND	82	12-82	1	78,390		MGN	114,835
5	R01 GM25578-05 21400	QUINN, WILLIAM G, JR GENETIC ANALYSIS OF LEARNING AND MEMORY IN DROSOPHILA	PRINCETON UNIVERSITY	PRINCETON	NEW JERSEY	82	06-83	1	65,009		GEN	100,119
5	R01 GM26153-04 21400	ALLEN, DONALD O BIOCHEMISTRY OF INHERITED VARIATIONS IN DRUG RESPONSE	UNIVERSITY OF SOUTH CAROLINA AT COLUMBIA	COLUMBIA	SOUTH CAROLINA	81	06-83	0	41,879		MET	56,800
2	R01 GM26463-04 21400	BERGER, NATHAN A POLY(ADPR) IN GENETIC DISORDERS OF DNA REPAIR	JEWISH HOSPITAL OF ST. LOUIS	SAINT LOUIS	MISSOURI	82	03-83	4	147,388		MGN	190,402
5	R01 GM27018-06 21400	HARRIS, HARRY INHERITED HUMAN ENZYME DIVERSITY	UNIVERSITY OF PENNSYLVANIA	PHILADELPHIA	PENNSYLVANIA	82	02-83	2	91,697		MGN	151,300
5	R01 GM28067-02 21400	SUAREZ, BRIAN K GENETIC TRANSMISSION OF VARIANT ANTITRYPSIN ALLELES	WASHINGTON UNIVERSITY	SAINT LOUIS	MISSOURI	81	06-83	0	65,181		MGN	87,369

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T	GRANT NUMBER / PROG-AREA	INVESTIGATOR / PROJECT TITLE	GRANTEE INSTITUTION	CITY	FY / STATE	END-DATE	FUT-YRS AVAILABLE DIRECT	IRG / SUB	DOLLARS TOTAL
	MOLECULAR AND MEDICAL GENETICS SECTION								
	HUMAN MEDICAL AND BEHAVIORAL GENETICS								
5	R01 GM28223-03 / 21400	FRIEDMANN, THEODORE STUDIES OF MAMMALIAN HGPRT GENES	UNIVERSITY OF CALIFORNIA	SAN DIEGO LA JOLLA	82 CALIFORNIA	07-83	124,990 0	MGN	166,362
5	R01 GM28262-03 / 21400	SOKAL, ROBERT R SPATIAL ANALYSIS OF HUMAN VARIATION	STATE UNIVERSITY NEW YORK	STONY BROOK STONY BROOK	82 NEW YORK	06-83	43,776 0	GEN	66,758
5	R01 GM28356-03 / 21400	ELSTON, ROBERT C GENETIC ANALYSIS OF MULTIFACTORIAL TRAITS	LOUISIANA STATE UNIV MED CTR	NEW ORLEANS NEW ORLEANS	82 LOUISIANA	11-82	77,088 1	GEN	102,527
5	P01 GM28428-03 / 21400	CAVALLI-SFORZA, LUIGI L GENETICS RESEARCH PROJECT	STANFORD UNIVERSITY	STANFORD	82 CALIFORNIA	04-83	285,015 0	SSS	450,324
5	R01 GM28719-03 / 21400	RAO, DABEERU C PATH ANALYSIS OF FAMILY RESEMBLANCE	WASHINGTON UNIVERSITY	SAINT LOUIS	82 MISSOURI	06-83	66,988 2	MGN	103,831
5	R01 GM28762-03 / 21400	HIRSCHHORN, KURT STUDIES OF INHERITED STORAGE DISEASES IN CELL CULTURE	MOUNT SINAI SCHOOL OF MEDICINE	NEW YORK	82 NEW YORK	07-83	134,611 0	MGN	200,570
5	R01 GM28840-03 / 21400	ADAMS, SHERRILL L ANALYSIS OF HUMAN COLLAGEN GENE EXPRESSION	UNIVERSITY OF PENNSYLVANIA	PHILADELPHIA	82 PENNSYLVANIA	07-83	62,875 0	MGN	102,922
5	R01 GM29033-02 / 21400	LISKAY, ROBERT M MOLECULAR GENETIC STUDY OF X CHROMOSOME INACTIVATION	YALE UNIVERSITY	NEW HAVEN	82 CONNECTICUT	03-83	51,553 1	MGN	81,454
5	R01 GM29788-03 / 21400	GATTI, RICHARD A MHC AND CANCER SUSCEPTIBILITY GENES IN MAN	UNIVERSITY OF CALIFORNIA LOS ANGELES	LOS ANGELES	82 CALIFORNIA	08-83	86,467 0	MGN	118,962
1	R01 GM30135-01 / 21400	SMOUSE, PETER E GENETIC DEMOGRAPHY OF TRIBAL POPULATIONS	UNIVERSITY OF MICHIGAN AT	ANN ARBOR ANN ARBOR	82 MICHIGAN	02-83	44,396 1	MGN	70,146
1	R01 GM30250-01 / 21400	EAVES, LINDON J RESOLVING POWER OF KINSHIP ANALYSIS FOR GENETIC RESEARCH	VIRGINIA COMMONWEALTH UNIVERSITY	RICHMOND	82 VIRGINIA	01-83	14,823 3	MGN	21,538
1	R01 GM30638-01 / 21400	MARKOW, THERESE A GENETICS OF SEXUAL SELECTION	ARIZONA STATE UNIVERSITY	TEMPE	82 ARIZONA	04-83	28,742 2	GEN	43,400
1	R01 GM31110-01 / 21400	GROSSMAN, LAWRENCE DNA REPAIR GENE EXPRESSION IN MAMMALIAN CELLS	JOHNS HOPKINS UNIVERSITY	BALTIMORE	82 MARYLAND	06-83	89,795 4	BIO 1	134,363
1	R01 GM31740-01 / 21400	COWAN, NICHOLAS J STRUCTURE AND EXPRESSION OF HUMAN TUBULIN GENES	NEW YORK UNIVERSITY	NEW YORK	82 NEW YORK	08-83	90,871 2	MGN	128,279
							0		0
							756,258		1,152,079
							2,425,159		3,562,846
							0		0
							3,181,417		4,714,925

**	0	MCENTERS (P50)
**	3	PROGRAM PROJECTS (P01)
**	27	REGULAR PROJECTS (R01)
**	0	ALL OTHERS (P30, P41, R13, R23, R25)
**	30	TOTALS

MOLECULAR AND MEDICAL GENETICS SECTION
CYTOGENETICS AND GENE MAPPING

T	GRANT NUMBER / PROG-AREA	INVESTIGATOR / PROJECT TITLE	GRANTEE INSTITUTION	CITY	FY / STATE	END-DATE	FUT-YRS AVAILABLE	IRG SUB DOLLARS DIRECT	TOTAL
5	R01 GM09966-21 / 21480	RUDDLE, FRANK H / GENETIC ANALYSIS OF SOMATIC CELL POPULATIONS	YALE UNIVERSITY	NEW HAVEN	82 / CONNECTICUT	08-83	2	336,861	MGN 563,886
2	R01 GM18684-11 / 21480	TAYLOR, BENJAMIN A / GENETIC ANALYSIS OF COMPLEX INFIRMITIES	JACKSON LABORATORY	BAR HARBOR	82 / MAINE	06-83	4	122,588	MGN 164,907
2	R01 GM19656-11 / 21480	RODERICK, THOMAS H / STUDY OF MAMMALIAN CHROMOSOMAL INVERSIONS	JACKSON LABORATORY	BAR HARBOR	82 / MAINE	08-83	4	69,526	MGN 91,657
5	R01 GM20454-10 / 21480	SHOWS, THOMAS B / HUMAN GENE LINKAGE RELATIONSHIPS IN CELL HYBRIDS	ROSWELL PARK MEMORIAL INSTITUTE	BUFFALO	82 / NEW YORK	07-83	3	155,894	MGN 226,490
5	R01 GM20700-08 / 21480	CROCE, CARLO M / ENZYME MARKERS IN THE MAPPING OF HUMAN GENES	WISTAR INSTITUTE OF ANATOMY AND BIOLOGY	PHILADELPHIA	82 / PENNSYLVANIA	11-82	0	72,097	GEN 111,532
5	R01 GM22629-08 / 21480	CHASIN, LAWRENCE A / FINE STRUCTURE MAPPING OF MUTATIONS IN MAMMALIAN CELLS	COLUMBIA UNIVERSITY	NEW YORK	82 / NEW YORK	08-83	1	111,260	MGN 188,808
2	R01 GM23073-07 / 21480	RYDER, OLIVER A / COMPARATIVE MOLECULAR CYTOGENETICS	ZOOLOGICAL SOCIETY OF SAN DIEGO	SAN DIEGO	82 / CALIFORNIA	07-83	2	83,747	MGN 99,887
5	R01 GM24265-05 / 21480	ELLIOTT, ROSEMARY W / MAPPING MOUSE GENES USING 2-D ELECTROPHORESIS	ROSWELL PARK MEMORIAL INSTITUTE	BUFFALO	82 / NEW YORK	08-83	1	38,879	MGN 53,679
2	R01 GM24309-06 / 21480	EPSTEIN, CHARLES J / MOLECULAR EFFECTS OF CHROMOSMAL ANEUPLOIDY	UNIVERSITY OF CALIFORNIA SAN FRANCISCO	SAN FRANCISCO	82 / CALIFORNIA	07-83	4	97,979	MGN 125,119
5	R01 GM25193-05 / 21480	MILLER, ORLANDO J / ANTIBODY PROBES OF CHROMOSOME STRUCTURE	COLUMBIA UNIVERSITY	NEW YORK	82 / NEW YORK	03-83	1	81,787	MGN 137,075
2	R01 GM25339-04 / 21480	WASMUTH, JOHN J / GENETIC MAPPING AND CLONING MAMMALIAN GENES	UNIVERSITY OF CALIFORNIA IRVINE	IRVINE	82 / CALIFORNIA	11-82	2	65,170	MGN 83,203
2	R01 GM26105-05 / HD 21480	FRANCKE, UTA / INTRACHROMOSOMAL GENE MAPPING	YALE UNIVERSITY	NEW HAVEN	82 / CONNECTICUT	06-83	4	104,500	MGN 171,480
2	R01 GM26449-04 / CA 21480	FOURNIER, RAYMOND E / GENETIC ANALYSIS OF CELL-TYPE-SPECIFIC FUNCTIONS	UNIVERSITY OF SOUTHERN CALIFORNIA	LOS ANGELES	82 / CALIFORNIA	03-83	2	93,769	MGN 133,609
5	R01 GM26522-04 / 21480	CHAN, TEH-SHENG / SOMATIC CELL HYBRIDS FOR STUDIES OF HUMAN DISEASES	UNIVERSITY OF TEXAS MED BR GALVESTON	GALVESTON	82 / TEXAS	11-82	1	60,474	MGN 81,290
5	R01 GM26631-03 / 21480	KAO, FA-TEN / CELL HYBRIDS CONTAINING SINGLE HUMAN CHROMOSOMES	UNIVERSITY OF COLORADO HLTH SCIENCES CTR	DENVER	82 / COLORADO	06-83	0	90,098	MGN 113,614
5	R01 GM26659-03 / 21480	CONNEALLY, P MICHAEL / GENETIC LINKAGE STUDIES OF HUNTINGTON'S DISEASE	INDIANA UNIV-PURDUE UNIV AT INDIANAPOLIS	INDIANAPOLIS	82 / INDIANA	12-82	2	57,436	MGN 82,708

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	MOLECULAR AND MEDICAL GENETICS SECTION							
	CYTOGENETICS AND GENE MAPPING							
5	R01 GM26717-03 21480	BLAU, HELEN M MUSCLE DIFFERENTIATION IN HETEROKARYONS	STANFORD UNIVERSITY	STANFORD	81 CALIFORNIA	06-83	0 49,939	GEN 76,774
3	R01 GM26717-03S1 21480	BLAU, HELEN M MUSCLE DIFFERENTIATION IN HETEROKARYONS	STANFORD UNIVERSITY	STANFORD	82 CALIFORNIA	06-83	0 18,985	CTY 29,996
5	R01 GM26941-03 21480	TYE, BIK-KWOON THE STRUCTURAL GENE FOR A YEAST PHEROMONE	CORNELL UNIVERSITY ITHACA	ITHACA	82 NEW YORK	04-83	0 43,631	GEN 63,287
5	R01 GM27096-03 21480	USHER, DAVID C REGULATION OF TWO GENES LINKED TO AN IGK CHAIN GENE	UNIVERSITY OF DELAWARE	NEWARK	82 DELAWARE	12-82	0 49,518	MGN 76,498
5	R01 GM27102-03 21480	DAVISSON, MURIEL T ROBERTSONIAN CHROMOSOMES OF THE MOUSE	JACKSON LABORATORY	BAR HARBOR	82 MAINE	04-83	0 69,267	MGN 105,828
5	R01 GM27115-03 21480	VONDER HAAR, RAYMOND A FRAMESHIFT MUTANTS AND SUPPRESSORS IN MAMMALIAN CELLS	TEXAS AGRI AND MECH UNIV	COLLEGE STATION COLLEGE STATION	82 TEXAS	12-82	0 23,092	MGN 29,789
5	R01 GM27268-03 21480	MORROW, KENNETH J, JR REGULATORY MUTATIONS AFFECTING HPRT SYNTHESIS	TEXAS TECH UNIVERSITY	LUBBOCK	82 TEXAS	11-82	0 21,464	MGN 27,903
5	R01 GM27871-03 21480	BRUNS, PETER J THE GENETIC ORGANIZATION OF TETRAHYMENA	CORNELL UNIVERSITY ITHACA	ITHACA	82 NEW YORK	03-83	2 63,072	GEN 94,951
5	R01 GM27882-03 21480	HOUSMAN, DAVID E GENETIC STRUCTURE AND FUNCTION OF HUMAN CHROMOSOME II	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	CAMBRIDGE	82 MASSACHUSETTS	03-83	0 51,629	MGN 81,909
5	R01 GM28464-02 21480	ELLIOTT, ROSEMARY W DETECTING AND MAPPING SEQUENCE CHANGES IN MOUSE DNA	NEW YORK STATE DEPARTMENT OF HEALTH	ALBANY	82 NEW YORK	11-82	3 77,710	MGN 107,770
5	R01 GM28931-02 21480	SCOTT, ALAN F GLOBIN GENE REGULATION IN NON-HUMAN PRIMATES	JOHNS HOPKINS UNIVERSITY	BALTIMORE	82 MARYLAND	03-83	1 74,869	MGN 111,454
5	R01 GM29086-02 21480	FINNERTY, WILLIAM R GENETICS OF ALKANE UTILIZATION IN ACINETOBACTER	UNIVERSITY OF GEORGIA	ATHENS	82 GEORGIA	02-83	1 42,521	MG 58,551
5	R01 GM29111-02 21480	RUDDLE, FRANK H HUMAN GENE LIBRARY	YALE UNIVERSITY	NEW HAVEN	82 CONNECTICUT	06-83	1 115,201	SSS 193,538
5	R01 GM29177-02 21480	FALK, CATHERINE T LINKAGE AND ASSOCIATION OF GENETIC MARKERS AND DISEASE	NEW YORK BLOOD CENTER	NEW YORK	82 NEW YORK	03-83	1 69,375	MGN 96,225
5	R01 GM29249-03 21480	VANDEBERG, JOHN L ISOZYME GENETICS OF MAMMALS AND BIRDS	SOUTHWEST FOUNDATION FOR RESEARCH & EDUC	SAN ANTONIO	82 TEXAS	08-83	0 88,341	MGN 160,339
5	R01 GM29789-02 21480	WHITE, RAYMOND L HUMAN LINKAGE MAPPING WITH DNA POLYMORPHISM	UNIVERSITY OF UTAH	SALT LAKE CITY	82 UTAH	12-82	0 93,218	MGN 126,629

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	MOLECULAR AND MEDICAL GENETICS SECTION CYTOGENETICS AND GENE MAPPING									
5	R01 GM29797-02 21480	SIMON, MELVIN I GENETIC AND MOLECULAR MAPPING OF THE MOUSE GENOME	AGOURON INSTITUTE	LA JOLLA	CALIFORNIA	82	02-83	1	129,836	GEN 192,629
1	R01 GM30248-01 21480	GROSS, KENNETH W ANDROGEN RESPONSIVE GENES OF MOUSE SUBMAXILLARY GLAND	ROSWELL PARK MEMORIAL INSTITUTE	BUFFALO	NEW YORK	82	01-83	2	73,387	MGN 106,306
1	R13 GM30430-01 GM 21480	DAVIDSON, RICHARD L FASEB CONFERENCE ON SOMATIC CELL GENETICS	FEDERATION OF AMER SOC FOR EXPER BIO	BETHESDA	MARYLAND	82	05-83	0	2,000	GEN 2,000
1	R01 GM30467-01 21480	BOTSTEIN, DAVID HUMAN DNA POLYMORPHISMS FOR GENETIC MAPPING	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	CAMBRIDGE	MASSACHUSETTS	82	04-83	2	87,195	MGN 122,264
1	R01 GM30476-01 21480	DISTECHE, CHRISTINE M ISOLATION OF X- & 7-SPECIFIC DNA TO STUDY X INACTIVATION	UNIVERSITY OF WASHINGTON	SEATTLE	WASHINGTON	82	04-83	2	85,627	MGN 99,960
7	R01 GM31056-01 21480	KLEBE, ROBERT J SOMATIC CELL GENETICS OF DIFFERENTIATED PHENOTYPES	UNIVERSITY OF TEXAS HLTH SCI CTR SAN ANT	SAN ANTONIO	TEXAS	81	11-82	0	9,329	MGN 9,329
5	R01 GM31260-02 21480	DE FRANCESCO, LAURA RECOMBINATION IN MITOCHONDRIAL GENOME OF ANIMAL CELLS	CITY OF HOPE RESEARCH INSTITUTE	DUARTE	CALIFORNIA	82	11-83	0	32,365	MGN 53,435
7	R01 GM32111-01 21480	DARLINGTON, GRETCHEN J ACTIVATION OF HUMAN HEPATIC GENES IN CELL HYBRIDS	BAYLOR COLLEGE OF MEDICINE	HOUSTON	TEXAS	82	02-83	4	64,691	CTY 87,826

**	0	*CENTERS (P50)		
**	0	PROGRAM PROJECTS (P01)	0	0
**	39	REGULAR PROJECTS (R01)	0	0
**	1	ALL OTHERS (P30, P41, R13, R23, R25)	3,076,327	4,542,134
**	40	TOTALS	2,000	2,000
			3,078,327	4,544,134

SUMMARY OF MOLECULAR AND MEDICAL GENETICS SECTION

***	0	*CENTERS (P50)	0	0
***	3	PROGRAM PROJECTS (P01)	756,258	1,152,079
***	576	REGULAR PROJECTS (R01)	39,410,604	57,125,739
***	3	ALL OTHERS (P30, P41, R13, R23, R25)	9,000	9,000
***	582	TOTALS	40,175,862	58,286,818

TABLE-4 RESEARCH GRANTS ACTIVE AS OF 09-30-82 BY PROGRAM AREA AND GRANT NUMBER

T	GRANT NUMBER / PROG-AREA	INVESTIGATOR / PROJECT TITLE	GRANTEE INSTITUTION	CITY	FY / STATE	END-DATE	FUT-YRS AVAILABLE DIRECT	IRG SUB DOLLARS TOTAL
	GENETICS OF GROWTH AND DIFFERENTIATION SECTION							
	CHROMOSOME ORGANIZATION AND MECHANICS							
1	R13 GM01628-01 JF 21600	GOAD, WALTER B WORKSHOP ON COMPUTATIONAL ANALYSIS OF DNA SEQUENCES	ASPEN CENTER FOR PHYSICS	ASPEN	82 COLORADO	07-83	0 3,000	SRC 3,000
2	R01 GM04738-26A1 21600	RIS, HANS SUBMICROSCOPIC ORGANIZATION OF CHROMOSOMES	UNIVERSITY OF WISCONSIN MADISON	MADISON	82 WISCONSIN	06-83	1 55,960	MBY 80,023
5	R01 GM10499-18 21600	GAY, HELEN CHROMOSOME STRUCTURE IN RELATION TO GENE ACTION	UNIVERSITY OF MICHIGAN AT ANN ARBOR	ANN ARBOR	80 MICHIGAN	06-83	0 39,449	GEN 62,329
2	R01 GM10991-23 21600	DAVIDSON, NORMAN R PHYSICIAL CHEMISTRY OF NUCLEIC ACIDS	CALIFORNIA INSTITUTE OF TECHNOLOGY	PASADENA	82 CALIFORNIA	05-83	3 211,358	CTY 310,650
5	R01 GM12427-19 21600	GALL, JOSEPH G THE ORGANIZATION OF ANIMAL CELL NUCLEI	YALE UNIVERSITY	NEW HAVEN	82 CONNECTICUT	08-83	1 119,450	MBY 197,276
5	R01 GM13864-17 21600	KUEHL, LEROY R NONHISTONE NUCLEAR PROTEINS	UNIVERSITY OF UTAH	SALT LAKE CITY	82 UTAH	05-83	1 62,194	PC 90,181
2	R01 GM14931-16 21600	SCHIMKE, ROBERT T ENZYME SYNTHESIS AND DEGRADATION IN METABOLIC CONTROL	STANFORD UNIVERSITY	STANFORD	82 CALIFORNIA	11-82	4 109,479	BIO 163,987
5	R01 GM15886-16 21600	COMINGS, DAVID E PHYSIOLOGY AND BIOCHEMISTRY OF HUMAN CHROMOSOMES	CITY OF HOPE NATIONAL MEDICAL CENTER	DUARTE	82 CALIFORNIA	11-82	2 90,867	GEN 130,667
5	R01 GM17383-12 21600	ALLFREY, VINCENT G CHEMISTRY AND METABOLISM OF DNA-ASSOCIATED PROTEINS	ROCKEFELLER UNIVERSITY	NEW YORK	82 NEW YORK	01-83	3 78,125	SSS 118,112
5	R01 GM17533-21 21600	FASMAN, GERALD D PROTEIN NUCLEIC ACID INTERACTIONS: CHROMATIN STUDIES	BRANDEIS UNIVERSITY	WALTHAM	82 MASSACHUSETTS	12-82	0 99,217	BBCA 157,322
5	R01 GM17995-10 21600	KEDES, LAURENCE H EMBRYONIC CHROMOSOMAL PROTEINS AND THEIR RNA TEMPLATES	STANFORD UNIVERSITY	STANFORD	82 CALIFORNIA	04-83	1 74,217	CBY 107,615
5	R01 GM18243-11 21600	PETTIJOHN, DAVID E PACKAGING OF DNA IN CHROMOSOMES	UNIVERSITY OF COLORADO HLTH SCIENCES CTR	DENVER	82 COLORADO	11-82	3 70,255	CTY 86,777
5	R01 GM18678-12 21600	NOVITSKI, EDWARD THE SYNTHESIS AND ANALYSIS OF CHROMOSOMES	UNIVERSITY OF OREGON	EUGENE	82 OREGON	08-83	1 58,322	GEN 84,042
5	R01 GM18926-11 21600	FANGMAN, WALTON L EUKARYOTIC CHROMOSOME STRUCTURE AND REPLICATION	UNIVERSITY OF WASHINGTON	SEATTLE	82 WASHINGTON	12-82	3 112,505	GEN 149,898
5	R01 GM19179-11 21600	LAIRD, CHARLES D CHROMOSOME STRUCTURE AND FUNCTION	UNIVERSITY OF WASHINGTON	SEATTLE	82 WASHINGTON	02-83	2 75,753	GEN 100,179
5	R01 GM19194-11 21600	TARTOF, KENNETH D STRUCTURE AND FUNCTION OF GENES	INSTITUTE FOR CANCER RESEARCH	PHILADELPHIA	82 PENNSYLVANIA	04-83	2 109,635	GEN 166,795

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GENETICS OF GROWTH AND DIFFERENTIATION SECTION							
CHROMOSOME ORGANIZATION AND MECHANICS							
5 R01 GM19199-11 21600	PRESCOTT, DAVID M THE GENETIC APPARATUS OF HYPOTRICHOUS CILIATES	UNIVERSITY OF COLORADO AT BOULDER	BOULDER	82 COLORADO	07-83	2 108,030	CTY 151,134
2 R01 GM19334-11 21600	OLINS, DONALD E PHYSICAL PROPERTIES OF ISOLATED NUCLEI AND CHROMOSOMES	UNIVERSITY OF TENNESSEE KNOXVILLE	KNOXVILLE	82 TENNESSEE	08-83	4 80,780	BBCA 104,076
2 R01 GM19582-10 21600	MAGUIRE, MARJORIE P CHROMOSOME STRUCTURES AND MEIOTIC MECHANISMS	UNIVERSITY OF TEXAS AUSTIN	AUSTIN	82 TEXAS	01-83	2 15,737	GEN 21,245
5 R01 GM20158-10 21600	HOGNESS, DAVID S THE ARRANGEMENT OF INFORMATION IN ANIMAL CHROMOSOMES	STANFORD UNIVERSITY	STANFORD	82 CALIFORNIA	01-83	0 124,856	GEN 191,820
5 R01 GM20338-15 21600	COLE, R DAVID HISTONE BIOCHEMISTRY AND THE INFLUENCE OF HORMONES	UNIVERSITY OF CALIFORNIA BERKELEY	BERKELEY	82 CALIFORNIA	05-83	0 107,080	PC 139,035
5 R01 GM20483-09 21600	CEDAR, HOWARD TRANSCRIPTION AND MODIFICATION OF CHROMATIN DNA	HEBREW UNIVERSITY OF JERUSALEM	JERUSALEM	82 ISRAEL	05-83	0 67,302	MGN 67,302
5 R01 GM20608-08 21600	CHU, ERNEST H GENETIC CONTROL OF MAMMALIAN CELL METABOLISM	UNIVERSITY OF MICHIGAN AT ANN ARBOR	ANN ARBOR	82 MICHIGAN	11-82	2 55,684	MGN 87,981
2 R01 GM20919-09 21600	EICHER, EVA M CYTOGENETICS OF THE MOUSE	JACKSON LABORATORY	BAR HARBOR	82 MAINE	06-83	4 156,955	MGN 227,942
5 P01 GM20927-08 21600	DAVIDSON, ERIC H SEQUENCE STRUCTURE OF EUKARYOTIC GENOME	CALIFORNIA INSTITUTE OF TECHNOLOGY	PASADENA	82 CALIFORNIA	05-83	1 241,132	SSS 352,075
5 R01 GM21020-06 21600	MILLER, OSCAR L, JR ULTRA STRUCTURAL STUDIES OF GENETIC ACTIVITY	UNIVERSITY OF VIRGINIA CHARLOTTESVILLE	CHARLOTTESVILLE	82 VIRGINIA	11-82	0 80,090	GEN 116,131
5 R01 GM21121-09 21600	LATT, SAMUEL A PROTEIN-DNA INTERACTIONS IN HUMAN CHROMOSOMES	CHILDREN'S HOSPITAL MEDICAL CENTER	BOSTON	82 MASSACHUSETTS	01-83	1 125,547	GEN 200,773
5 R01 GM21305-08 21600	WANG, RICHARD J MITOSIS AND MITOTIC ARREST IN MAMMALIAN CELLS	UNIVERSITY OF MISSOURI COLUMBIA	COLUMBIA	82 MISSOURI	05-83	0 64,330	MGN 87,167
5 R01 GM21313-08 21600	EDGELL, MARSHALL H EUKARYOTIC GENE ORGANIZATION	UNIVERSITY OF NORTH CAROLINA CHAPEL HILL	CHAPEL HILL	82 NORTH CAROLINA	11-82	0 124,860	MGN 172,676
5 R01 GM21346-09 21600	SCHMID, CARL W, JR REPETITIVE DNA SEQUENCES IN THE HUMAN GENOME	UNIVERSITY OF CALIFORNIA DAVIS	DAVIS	82 CALIFORNIA	08-83	3 56,640	MBY 77,484
5 R01 GM21487-06 21600	HARFORD, A GAYLER NATURAL CORRECTION OF GENE DEFICIENCIES	STATE UNIVERSITY OF NEW YORK AT BUFFALO	BUFFALO	80 NEW YORK	06-83	0 59,702	GEN 86,625
5 R01 GM21498-08 21600	BRUTLAG, DOUGLAS L STRUCTURE OF PERICENTRIC HETEROCHROMATIN	STANFORD UNIVERSITY	STANFORD	82 CALIFORNIA	03-83	3 75,736	GEN 115,693

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		GENETICS OF GROWTH AND DIFFERENTIATION SECTION						
		CHROMOSOME ORGANIZATION AND MECHANICS						
5	R01 GM21514-08 21600	GILBERT, WALTER INTERACTION OF PROTEINS WITH DNA	HARVARD UNIVERSITY	CAMBRIDGE	82 MASSACHUSETTS	11-82	0 55,569	MBC 85,576
5	R01 GM21626-08 21600	WENSINK, PIETER C SEQUENCE ARRANGEMENT IN EUKARYOTIC DNA & CHROMOSOMES	BRANDEIS UNIVERSITY	WALTHAM	82 MASSACHUSETTS	11-82	0 66,072	GEN 107,037
5	R01 GM21793-08 21600	GOROVSKY, MARTIN A REPEATED GENES: ORGANIZATION, EVOLUTION AND FUNCTION	UNIVERSITY OF ROCHESTER	ROCHESTER	82 NEW YORK	01-83	2 112,888	GEN 194,205
5	R01 GM21846-07 21600	CHAE, CHI-BOM ROLE OF CHROMOSOMAL PROTEASE IN NUCLEAR FUNCTIONS	UNIVERSITY OF NORTH CAROLINA CHAPEL HILL	CHAPEL HILL	82 NORTH CAROLINA	03-83	0 36,093	PBC 49,990
5	R01 GM21919-08 21600	COLEMAN, JOSEPH E STRUCTURE AND FUNCTION OF DNA BINDING PROTEINS	YALE UNIVERSITY	NEW HAVEN	82 CONNECTICUT	05-83	0 56,576	BBCB 89,390
5	R01 GM22138-08 21600	BLUMENFELD, MARTIN S SATELLITE DNA AND MOLECULAR ORGANIZATION OF CHROMOSOMES	UNIVERSITY OF MINNESOTA OF MNPLS-ST PAUL	MINNEAPOLIS	82 MINNESOTA	12-82	1 76,223	GEN 101,755
5	R01 GM22201-08 21600	GARRARD, WILLIAM T STRUCTURE OF THE SUBUNITS OF EUKARYOTIC CHROMOSOMES	UNIVERSITY OF TEXAS HLTH SCI CTR DALLAS	DALLAS	82 TEXAS	04-83	0 57,000	CTY 75,283
5	R01 GM22359-07 21600	BASERGA, RENATO L CHROMOSOMAL PROTEINS IN CELL PROLIFERATION	TEMPLE UNIVERSITY	PHILADELPHIA	82 PENNSYLVANIA	02-83	1 48,386	PTHB 74,031
2	R01 GM22916-07 21600	VAN HOLDE, KENSAL E SUBUNIT STRUCTURE OF CHROMATIN	OREGON STATE UNIVERSITY	CORVALLIS	82 OREGON	03-83	2 78,540	MBY 99,104
5	R01 GM23030-07 21600	KRUEGER, ROBERT C STRUCTURE AND TEMPLATE ACTIVITY OF CHROMATIN	UNIVERSITY OF CINCINNATI	CINCINNATI	82 OHIO	06-83	1 33,794	PBC 47,312
2	R01 GM23338-07 21600	CARPENTER, ADELAIDE T EM OF RECOMBINATION MUTANTS IN DROSOPHILA	UNIVERSITY OF CALIFORNIA SAN DIEGO	LA JOLLA	82 CALIFORNIA	06-83	4 79,896	GEN 105,845
5	R01 GM23526-06 21600	SHETLAR, MARTIN D PHOTOINDUCED DNA-PROTEIN CROSS-LINKING IN CHROMATIN	UNIVERSITY OF CALIFORNIA SAN FRANCISCO	SAN FRANCISCO	82 CALIFORNIA	03-83	1 51,742	RAD 66,666
5	R01 GM23674-06 21600	GRUNSTEIN, MICHAEL HISTONE GENE EXPRESSION IN DEVELOPING SEA URCHIN EMBRYO	UNIVERSITY OF CALIFORNIA LOS ANGELES	LOS ANGELES	82 CALIFORNIA	12-82	2 89,037	MBY 115,554
5	R01 GM23681-06 21600	SHAW, BARBARA R CHANGES IN NUCLEOSOME STRUCTURE DURING EMBRYOGENESIS	DUKE UNIVERSITY	DURHAM	82 NORTH CAROLINA	12-82	1 40,187	PBC 59,406
5	R01 GM23905-06 21600	HOLMQUIST, GERALD P G-BANDING MECHANISMS IN MAMMALIAN CHROMOSOMES	BAYLOR COLLEGE OF MEDICINE	HOUSTON	82 TEXAS	06-83	2 75,013	MGN 100,739
2	R01 GM24030-07 21600	LERMAN, LEONARD S STRATEGY FOR THE CHARACTERIZATION OF THE HUMAN GENOME	STATE UNIVERSITY OF NEW YORK AT ALBANY	ALBANY	82 NEW YORK	08-83	2 108,743	BBCA 147,401

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		GENETICS OF GROWTH AND DIFFERENTIATION SECTION CHROMOSOME ORGANIZATION AND MECHANICS								
5	R01 GM24110-06 21600	PETES, THOMAS D YEAST CHROMOSOME STRUCTURE AND REPLICATION	UNIVERSITY OF CHICAGO	CHICAGO	ILLINOIS	82	07-83	2	86,494	GEN 142,035
5	R01 GM24320-06 21600	DRLICA, KARL A STRUCTURE OF THE BACTERIAL CHROMOSOME	UNIVERSITY OF ROCHESTER	ROCHESTER	NEW YORK	82	08-83	2	67,418	MG 117,307
5	R01 GM24430-05 21600	GRAINGER, ROBERT M FUNCTIONAL ORGANIZATION OF A PURIFIED EUKARYOTIC GENE	UNIVERSITY OF VIRGINIA CHARLOTTESVILLE	CHARLOTTESVILLE	VIRGINIA	82	12-82	1	74,095	GEN 104,738
5	R01 GM25101-05 21600	SEDAT, JOHN W STRUCTURAL DETERMINATION OF INTERPHASE CHROMOSOMES	UNIVERSITY OF CALIFORNIA SAN FRANCISCO	SAN FRANCISCO	CALIFORNIA	82	03-83	1	60,764	CTY 78,376
5	R01 GM25103-05 21600	YOUNG, MICHAEL W GENE ORGANIZATION AND FUNCTION IN D. MELANOGASTER	ROCKEFELLER UNIVERSITY	NEW YORK	NEW YORK	82	03-83	1	62,892	GEN 96,728
5	R01 GM25178-05 21600	SQUIRES, CATHERINE L TOTAL DNA SEQUENCES OF RIBOSOMAL RNA CISTRONS	COLUMBIA UNIVERSITY	NEW YORK	NEW YORK	82	03-83	3	87,970	MG 146,086
5	R01 GM25203-05 21600	HERRICK, GLENN A SOMATIC GENOME ALTERATIONS IN OXYTRICHA FALLAX	UNIVERSITY OF UTAH	SALT LAKE CITY	UTAH	82	03-83	1	79,453	MBY 115,207
5	R01 GM25273-05 21600	CECH, THOMAS R CHROMATIN STRUCTURE OF A TRANSCRIPTION UNIT	UNIVERSITY OF COLORADO AT BOULDER	BOULDER	COLORADO	82	03-83	1	63,567	MBY 88,281
5	R01 GM25365-03 21600	ARNHEIM, NORMAN GENETIC AND MOLECULAR STUDIES OF HUMAN AND MOUSE DNA	STATE UNIVERSITY NEW YORK STONY BROOK	STONY BROOK	NEW YORK	81	06-83	0	65,545	GEN 93,031
2	R01 GM25510-04 21600	GETZ, MICHAEL J REGULATION OF MRNA ABUNDANCE	MAYO FOUNDATION	ROCHESTER	MINNESOTA	82	03-83	2	91,300	MBY 123,220
2	R01 GM25663-04 21600	SMALL, ENOCH W FLUORESCENE STUDIES OF NUCLEOSOME STRUCTURAL CHANGES	OREGON STATE UNIVERSITY	CORVALLIS	OREGON	82	11-82	2	56,220	BBCA 72,768
5	R01 GM25794-03 21600	ISENBERG, IRVIN STUDY OF HMG AND A24 PROTEINS	OREGON STATE UNIVERSITY	CORVALLIS	OREGON	81	07-83	0	36,425	PC 46,948
5	R01 GM25864-03 21600	FOWLER, ELIZABETH F SEGREGATION OF CHROMOSOMAL PROTEINS	UNIVERSITY OF NORTH CAROLINA CHAPEL HILL	CHAPEL HILL	NORTH CAROLINA	81	11-82	0	59,134	MBY 84,273
2	R01 GM25871-04 21600	HOLMES, WALTER M GENE ORGANIZATION AND EXPRESSION OF TRNA	VIRGINIA COMMONWEALTH UNIVERSITY	RICHMOND	VIRGINIA	82	11-82	4	64,747	MG 94,089
5	R01 GM25886-03 21600	MARX, KENNETH A PROPERTIES OF NUCLEASE-RESISTING MOUSE CHROMATIN	DARTMOUTH COLLEGE	HANOVER	NEW HAMPSHIRE	81	07-83	0	41,541	GEN 62,021
2	R01 GM26028-04 AM 21600	VILLA-KOMAROFF, LYDIA THE STRUCTURE OF GENES ENCODING INSULIN-LIKE PEPTIDES	UNIVERSITY OF MASSACHUSETTS MEDICAL SCH	WORCESTER	MASSACHUSETTS	82	11-82	2	69,560	MGH 113,982

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		GENETICS OF GROWTH AND DIFFERENTIATION SECTION CHROMOSOME ORGANIZATION AND MECHANICS							
	5 R01 GM26086-04 21600	VARSHAVSKY, ALEXANDER J STRUCTURE OF CELLULAR AND VIRAL CHROMATIN STUDIES	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	CAMBRIDGE	82 MASSACHUSETTS	11-82	1	55,077	CBY 77,969
	5 R01 GM26176-04 21600	WEINTRAUB, HAROLD M THE COMPLEXITY OF CHROMOSOME STRUCTURE AND ASSEMBLY	FRED HUTCHINSON CANCER RESEARCH CENTER	SEATTLE	82 WASHINGTON	04-83	1	52,368	MBY 57,092
	5 R01 GM26259-05 21600	BLACKBURN, ELIZABETH H SPECIFIC DNA-PROTEIN INTERACTIONS IN TETRAHYMENA	UNIVERSITY OF CALIFORNIA BERKELEY	BERKELEY	82 CALIFORNIA	06-83	1	72,292	GEN 102,582
	5 R01 GM26362-03 21600	CASE, STEVEN T THE ORGANIZATION AND EXPRESSION OF CHROMOMERES	UNIVERSITY OF MISSISSIPPI MEDICAL CENTER	JACKSON	81 MISSISSIPPI	12-82	0	49,755	MBY 66,213
	2 R01 GM26378-04 21600	RAE, PETER M GENE INTERRUPTIONS	YALE UNIVERSITY	NEW HAVEN	82 CONNECTICUT	03-83	4	100,790	GEN 156,116
	5 R01 GM26415-03 21600	WRAY, GRANVILLE W PRECONDENSED CHROMOSOMES--STRUCTURE AND BIOCHEMISTRY	BAYLOR COLLEGE OF MEDICINE	HOUSTON	81 TEXAS	06-83	0	45,433	GEN 61,069
	5 R01 GM26440-03 21600	ADOLPH, KENNETH W NONHISTONE PROTEINS AND HELA CHROMOSOME STRUCTURE	UNIVERSITY OF MINNESOTA OF MNPLS-ST PAUL	MINNEAPOLIS	81 MINNESOTA	01-83	0	41,399	MBY 55,907
	2 R01 GM26453-04 21600	GOTTESFELD, JOEL M ISOLATION OF 5S GENE CHROMATIN	SCRIPPS CLINIC AND RESEARCH FOUNDATION	LA JOLLA	82 CALIFORNIA	07-83	2	102,760	GEN 159,205
	2 R01 GM26706-04 21600	EMERSON, CHARLES P, JR ORGANIZATION AND REGULATION OF MUSCLE GENES	UNIVERSITY OF VIRGINIA CHARLOTTESVILLE	CHARLOTTESVILLE	82 VIRGINIA	07-83	4	106,440	GEN 148,527
	5 R01 GM26710-03 21600	WADSWORTH, SAMUEL C TRANSCRIPTIONAL CONTROL OF HEAT SHOCK GENES	WORCESTER FDN FOR EXPER BIOLOGY	SHREWSBURY	81 MASSACHUSETTS	03-83	0	60,597	GEN 101,448
	5 R01 GM26742-03 21600	PINON, RAMON, JR FOLDED CHROMOSOMES FROM MITOTIC AND MEIOTIC CELLS	UNIVERSITY OF CALIFORNIA SAN DIEGO	LA JOLLA	81 CALIFORNIA	12-82	0	64,517	CBY 84,517
	5 R01 GM26803-03 21600	LEFFAK, IRA M CHROMATIN STRUCTURE AND REPLICATION	WRIGHT STATE UNIVERSITY	DAYTON	81 OHIO	12-82	0	45,616	CTY 66,221
	5 R01 GM26901-04 21600	BRADBURY, EDWIN M CHROMATIN, HISTONE MODIFICATIONS AND HMG PROTEINS	UNIVERSITY OF CALIFORNIA DAVIS	DAVIS	82 CALIFORNIA	07-83	0	142,120	MBY 193,684
	2 R01 GM27053-04A1 HL 21600	SUNG, MICHAEL T CHROMATIN STRUCTURE - MAPPING HISTONE/DNA DOMAINS	SOUTHERN ILLINOIS UNIVERSITY CARBONDALE	CARBONDALE	82 ILLINOIS	03-83	2	64,400	MBY 86,101
	5 R01 GM27228-03 21600	CHALKLEY, ROGER G REPLICATION AND ACETYLATION OF HEPATOMA CHROMATIN	UNIVERSITY OF IOWA	IOWA CITY	82 IOWA	12-82	0	68,085	CTY 93,957
	5 R01 GM27236-03 21600	BHORJEE, JASWANT S HIGH AFFINITY PROTEINS IN CHROMOSOME ORGANIZATION	UNIVERSITY OF ILLINOIS CHICAGO CIRCLE	CHICAGO	82 ILLINOIS	07-83	0	36,352	CTY 53,872

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		GENETICS OF GROWTH AND DIFFERENTIATION SECTION CHROMOSOME ORGANIZATION AND MECHANICS							
5	R01 GM27304-03 21600	CHINAULT, ALAN C MOLECULAR ORGANIZATION OF YEAST CENTROMERIC REGIONS	BAYLOR COLLEGE OF MEDICINE	HOUSTON	82 TEXAS	05-83	0 57,027	MBY 77,557	
2	R01 GM27611-04 21600	STORTI, ROBERT V EXPRESSION AND ISOLATION OF DROSOPHILA MUSCLE GENES	UNIVERSITY OF ILLINOIS MEDICAL CENTER	CHICAGO	82 ILLINOIS	07-83	2 71,700	GEN 113,286	
2	R01 GM27623-03A1 21600	LOHR, DENNIS E PHASING AND REPEATS IN ACTIVELY TRANSCRIBED CHROMATIN	ARIZONA STATE UNIVERSITY	TEMPE	82 ARIZONA	06-83	2 50,467	GEN 72,354	
5	R01 GM27719-03 21600	STEIN, ARNOLD CHROMATIN ASSEMBLY AND DISASSEMBLY BY PROTEINS	PURDUE UNIVERSITY WEST LAFAYETTE	WEST LAFAYETTE	82 INDIANA	04-83	0 67,136	MBY 92,190	
5	R01 GM27736-03 21600	LEVY, BEATRIZ W NUCLEOSOME STRUCTURE AND FUNCTION	UNIVERSITY OF CALIFORNIA IRVINE	IRVINE	82 CALIFORNIA	02-83	0 52,336	CTY 67,940	
5	R01 GM27774-03 21600	ROBBERSON, DONALD L SEQUENCE SPECIFIC DNA-PROTEIN INTERACTION	UNIVERSITY OF TEXAS SYSTEM CANCER CENTER	HOUSTON	82 TEXAS	03-83	0 12,286	MBC 17,016	
5	R01 GM27813-03 21600	DUNCAN, BRUCE K ENZYMES AND MUTANTS OF DNA METABOLISM	INSTITUTE FOR CANCER RESEARCH	PHILADELPHIA	82 PENNSYLVANIA	03-83	0 37,030	MBC 53,710	
5	R01 GM27863-03 21600	PUKKILA, PATRICIA J MEIOSIS AND GENETIC RECOMBINATION IN COPRINUS CINEREUS	UNIVERSITY OF NORTH CAROLINA CHAPEL HILL	CHAPEL HILL	82 NORTH CAROLINA	03-83	0 46,805	GEN 64,706	
5	R01 GM27916-02 21600	ROTHSTEIN, RODNEY J MECHANISMS OF GENOMIC REARRANGEMENTS IN YEAST	UNIVERSITY OF MEDICINE & DENTISTRY OF NJ	NEWARK	82 NEW JERSEY	01-83	1 26,000	GEN 43,225	
5	R01 GM27937-03 21600	LANGMORE, JOHN P CHROMOSOME STRUCTURE	UNIVERSITY OF MICHIGAN AT ANN ARBOR	ANN ARBOR	82 MICHIGAN	03-83	0 57,483	CTY 90,823	
5	R01 GM27950-03 21600	SEALE, RONALD L NUCLEOSOME-DNA INTERACTIONS IN CHROMATIN REPLICATION	SCRIPPS CLINIC AND RESEARCH FOUNDATION	LA JOLLA	82 CALIFORNIA	02-83	1 101,700	CTY 167,703	
5	R01 GM27968-03 21600	BURGOYNE, LEIGH A THE INTERNAL SPACE AND SURFACES OF EUKARYOTE NUCLEI	FLINDERS UNIVERSITY OF SOUTH AUSTRALIA	BEDFORD PARK	82 AUSTRALIA	07-83	0 26,173	CTY 26,173	
5	R01 GM28008-03 21600	PROCUNIER, JAMES D ANALYSIS OF EUCARYOTIC REDUNDANT LOCI	RICE UNIVERSITY	HOUSTON	82 TEXAS	06-83	0 50,564	GEN 69,778	
5	R01 GM28021-03 21600	LAWTHER, ROBERT P REGULATION OF THE ILVGEDA OPERON BY ATTENUATION	UNIVERSITY OF SOUTH CAROLINA AT COLUMBIA	COLUMBIA	82 SOUTH CAROLINA	06-83	0 60,360	MG 80,817	
5	R01 GM28027-02 21600	SHINE, JOHN BACTERIAL GENES INVOLVED IN SYMBIOTIC NITROGEN FIXATION	AUSTRALIAN NATIONAL UNIVERSITY	CANBERRA	81 AUSTRALIA	11-82	1 57,322	MBC 57,322	
5	R01 GM28079-03 21600	BRUTLAG, DOUGLAS L TOPOISOMERASES FOLD AND SEGREGATE CHROMOSOMES	STANFORD UNIVERSITY	STANFORD	82 CALIFORNIA	06-83	2 83,250	GEN 126,431	

TABLE-4 RESEARCH GRANTS ACTIVE AS OF 09-30-82 BY PROGRAM AREA AND GRANT NUMBER

T	GRANT NUMBER / PROG-AREA	INVESTIGATOR / PROJECT TITLE	GRANTEE INSTITUTION	CITY	STATE	FY	END-DATE	FUT-YRS AVAILABLE	DOLLARS DIRECT	IRG SUB DOLLARS TOTAL
		GENETICS OF GROWTH AND DIFFERENTIATION SECTION CHROMOSOME ORGANIZATION AND MECHANICS								
	5 R01 GM28090-03 21600	BOLLON, ARTHUR P ANALYSIS OF YEAST NUCLEAR GENES	WADLEY INSTITUTES OF MOLECULAR MEDICINE	DALLAS	TEXAS	82	06-83	0	51,741	GEN 67,946
	5 R01 GM28097-03 21600	LODISH, HARVEY F CHROMATIN STRUCTURE IN DICTYOSTELIUM DISCOIDEUM	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	CAMBRIDGE	MASSACHUSETTS	82	06-83	0	43,068	CTY 65,248
	5 R01 GM28232-03 21600	OLSON, MAYNARD V PHYSICAL MAPPING OF YEAST CHROMOSOMAL DNA	WASHINGTON UNIVERSITY	SAINT LOUIS	MISSOURI	82	07-83	2	75,157	GEN 114,293
	5 R01 GM28348-03 21600	LITMAN, GARY W UNIQUE HISTONE-LIKE CHROMOSOMAL PROTEIN	SLOAN-KETTERING INSTITUTE FOR CANCER RES	NEW YORK	NEW YORK	82	06-83	0	45,369	BIO 68,970
	5 R01 GM28349-03 21600	OLSON, MARK O NUCLEOLAR NONRIBOSOMAL, NONHISTONE PROTEINS	UNIVERSITY OF MISSISSIPPI MEDICAL CENTER	JACKSON	MISSISSIPPI	82	06-83	0	69,900	CTY 91,295
	5 R01 GM28507-02 21600	MAXAM, ALLAN M METHODS FOR RESOLVING GENE STRUCTURE	SIDNEY FARBER CANCER INSTITUTE	BOSTON	MASSACHUSETTS	82	11-82	1	89,698	GEN 144,031
	5 R01 GM28573-02 21600	KUO, MACUS T CHROMOSOME STRUCTURE AND GENE ARRANGEMENT	UNIVERSITY OF TEXAS SYSTEM CANCER CENTER	HOUSTON	TEXAS	82	01-83	1	77,496	MGH 107,332
	5 R01 GM28579-03 21600	ASHLEY, TERRY F INVESTIGATION OF CHROMOSOMAL ORGANIZATION IN NUCLEI	UNIVERSITY OF TENNESSEE KNOXVILLE	KNOXVILLE	TENNESSEE	82	03-83	0	51,355	GEN 74,465
	5 R01 GM28600-02 21600	FREELING, MICHAEL STRUCTURE OF THE ANAEROBIC STRESS GENES	UNIVERSITY OF CALIFORNIA BERKELEY	BERKELEY	CALIFORNIA	82	02-83	1	46,220	GEN 59,773
	1 R01 GM28632-01A1 21600	ARNHEIM, NORMAN STRUCTURE OF AN UNUSUAL MOUSE INTERSPERSED DNA SEQUENCE	STATE UNIVERSITY NEW YORK STONY BROOK	STONY BROOK	NEW YORK	82	08-83	2	64,047	MGN 92,815
	5 R01 GM28675-02 21600	MARTINSON, HAROLD G NUCLEOSOME FUNCTION	UNIVERSITY OF CALIFORNIA LOS ANGELES	LOS ANGELES	CALIFORNIA	82	11-82	3	39,593	BIO 51,867
	5 R01 GM28677-02 21600	DE LANGE, ROBERT J NUCLEOSOMAL STRUCTURE, ASSEMBLY, AND FUNCTION	UNIVERSITY OF CALIFORNIA LOS ANGELES	LOS ANGELES	CALIFORNIA	82	11-82	3	106,333	BIO 138,459
	5 R01 GM28699-03 21600	FARRON-FURSTENTHAL, F REGULATION OF NUCLEAR PROTEIN KINASES	UNIVERSITY OF CALIFORNIA SAN DIEGO	LA JOLLA	CALIFORNIA	82	04-83	0	52,220	MBY 68,408
	5 R01 GM28747-02 21600	THOMAS, JOHN O STRUCTURE AND FUNCTION OF THE NUCLEAR RNP COMPLEXES	NEW YORK UNIVERSITY	NEW YORK	NEW YORK	82	11-82	1	44,349	PC 66,302
	5 R01 GM28769-13 21600	WARNER, ROBERT C STUDIES OF POLYNUCLEOTIDES AND NUCLEIC ACIDS	UNIVERSITY OF CALIFORNIA IRVINE	IRVINE	CALIFORNIA	82	01-83	1	103,554	PC 135,036
	5 R01 GM28780-02 21600	REEDER, RONALD H ANTIBODIES AGAINST NUCLEOLAR PROTEINS	FRED HUTCHINSON CANCER RESEARCH CENTER	SEATTLE	WASHINGTON	82	03-83	1	99,850	MBY 110,217

T GRANT NUMBER PROG-AREA	INVESTIGATOR PROJECT TITLE	GRANTEE INSTITUTION	CITY	FY STATE	END-DATE	FUT-YRS AVAILABLE	IRG SUB DOLLARS DIRECT	TOTAL
GENETICS OF GROWTH AND DIFFERENTIATION SECTION CHROMOSOME ORGANIZATION AND MECHANICS								
5 R01 GM28817-15 21600	CHALKLEY, ROGER G STRUCTURE AND FUNCTION OF CHROMOSOMAL NUCLEOHISTONE	UNIVERSITY OF IOWA	IOWA CITY	82 IOWA	04-83	1	80,313	CTY 110,832
5 R01 GM28851-02 21600	MOORE, GORDON P ORGANIZATION OF TWO STRUCTURAL GENES IN FOUR DROSOPHILID	UNIVERSITY OF MICHIGAN AT ANN ARBOR	ANN ARBOR	82 MICHIGAN	03-83	1	57,000	GEN 85,362
5 R01 GM28975-02 21600	HJELM, REX P, JR ELECTRON MICROSCOPY OF CHROMATIN STRUCTURE	UNIVERSITY OF ILLINOIS MEDICAL CENTER	CHICAGO	82 ILLINOIS	03-83	0	24,700	MBY 38,779
5 R01 GM28986-02 21600	LIZARDI, PAUL M CHARACTERIZATION OF THE SMALL NUCLEAR RNA'S OF B MORI	ROCKEFELLER UNIVERSITY	NEW YORK	82 NEW YORK	03-83	1	59,195	MBY 89,969
5 R01 GM29002-03 21600	ESPOSITO, MICHAEL S COMPARATIVE ANALYSIS OF MITOTIC & MEIOTIC RECOMBINATION	UNIVERSITY OF CALIFORNIA BERKELEY	BERKELEY	82 CALIFORNIA	07-83	2	96,126	GEN 137,460
5 R01 GM29009-02 21600	HENIKOFF, STEVEN GENE REGULATION AND CHROMOSOMAL POSTION EFFECTS	FRED HUTCHINSON CANCER RESEARCH CENTER	SEATTLE	82 WASHINGTON	03-83	1	52,600	GEN 59,509
5 R01 GM29011-02 21600	STILES, JOHN I GENETIC AND PHYSICAL ANALYSIS OF THE COR REGION IN YEAST	INDIANA STATE UNIVERSITY TERRE HAUTE	TERRE HAUTE	82 INDIANA	03-83	1	33,495	GEN 43,358
5 R01 GM29090-02 21600	LEINWAND, LESLIE A STUDY OF A HIGHLY ABUDNDANT SMALL RNA MOLECULE	YESHIVA UNIVERSITY	NEW YORK	82 NEW YORK	08-83	1	74,868	SSS 136,313
5 R01 GM29097-02 21600	STROBEL, EDWARD CHROMOSOME ORGANIZATION AND STABILITY	PURDUE UNIVERSITY WEST LAFAYETTE	WEST LAFAYETTE	82 INDIANA	03-83	1	47,161	GEN 64,389
1 R01 GM29110-01A1 21600	DETKE, SIEGFRIED IDENTIFYING THE PROTEINS REGULATING THE X CHROMOSOMES	UNIVERSITY OF HLTH SCI/CHICAGO MED SCH	NORTH CHICAGO	82 ILLINOIS	08-83	1	100,314	MGN 166,526
5 R01 GM29119-02 21600	BLUMENFELD, MARTIN S AN UNUSUAL NUCLEOSOMAL PROTEIN OF DROSOPHILA	UNIVERSITY OF MINNESOTA OF MNPLS-ST PAUL	MINNEAPOLIS	82 MINNESOTA	03-83	1	62,906	GEN 83,752
5 R01 GM29179-02 21600	WU, RAY DNA SEQUENCE ANALYSIS OF EUCARYOTIC CYTOCHROME C GENES	CORNELL UNIVERSITY ITHACA	ITHACA	82 NEW YORK	03-83	3	75,270	GEN 108,289
5 R01 GM29203-02 21600	REECK, GERALD R INTERACTIONS OF HMG PROTEINS WITH DNA	KANSAS STATE UNIVERSITY	MANHATTAN	82 KANSAS	03-83	1	26,948	PC 37,636
5 R01 GM29227-11 21600	HATTMAN, STANLEY M DNA MODIFICATION/RESTRICTION IN PRO- AND EUKARYOTES	UNIVERSITY OF ROCHESTER	ROCHESTER	82 NEW YORK	08-83	0	55,928	PC 97,315
5 R01 GM29252-02 21600	GOLDSMITH, MARIAN R ORGANIZATION AND EXPRESSION OF A MULTIGENE FAMILY	UNIVERSITY OF RHODE ISLAND	KINGSTON	81 RHODE ISLAND	08-83	0	55,687	GEN 74,390
5 R01 GM29379-02 21600	MANIATIS, THOMAS P MOLECULAR GENETICS OF DROSOPHILA ALCOHOL DEHYDROGENASE	HARVARD UNIVERSITY	CAMBRIDGE	82 MASSACHUSETTS	06-83	3	104,568	GEN 159,955

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		GENETICS OF GROWTH AND DIFFERENTIATION SECTION CHROMOSOME ORGANIZATION AND MECHANICS							
1	R01 GM29429-01 21600	OLINS, ADA L CHROMATIN STRUCTURE	UNIVERSITY OF TENNESSEE KNOXVILLE	KNOXVILLE	82 TENNESSEE	08-83	2	CTY 55,310	85,197
1	R01 GM29442-01A1 21600	NELSON, DANIEL A ROLE OF HISTONE ACETYLATION IN GENE EXPRESSION	UNIVERSITY OF HOUSTON AT HOUSTON	HOUSTON	82 TEXAS	06-83	2	CTY 67,850	81,865
1	R01 GM29818-01 21600	BUNICK, GERALD J STRUCTURAL STUDIES OF NUCLEOSOMES	UNIVERSITY OF TENNESSEE KNOXVILLE	KNOXVILLE	82 TENNESSEE	12-82	2	BBCA 60,765	88,109
1	R01 GM29848-01 21600	DEININGER, PRESCOTT L HUMAN INTERSPERSED REPEATED DNA SEQUENCES	LOUISIANA STATE UNIV MED CTR NEW ORLEANS	NEW ORLEANS	81 LOUISIANA	02-83	2	BIO 73,015	89,220
1	R01 GM29928-01 21600	BRUENN, JEREMY A RELATEDNESS OF USTILAGE MAYDIS VIRAL DOUBLE-STRANDED RNA	STATE UNIVERSITY OF NEW YORK AT BUFFALO	BUFFALO	82 NEW YORK	01-83	2	MG 44,100	55,712
1	R01 GM29935-01 21600	GARRARD, WILLIAM T FUNCTION OF THE SUBUNITS OF EUKARYOTIC CHROMOSOMES	UNIVERSITY OF TEXAS HLTH SCI CTR DALLAS	DALLAS	82 TEXAS	01-83	2	CTY 85,980	113,840
1	R01 GM30180-01 21600	EDGELL, MARSHALL H SEQUENCE ELEMENTS IN THE MOUSE	UNIVERSITY OF NORTH CAROLINA CHAPEL HILL	CHAPEL HILL	82 NORTH CAROLINA	01-83	2	MGN 63,480	86,400
5	R01 GM30273-02 21600	ELGIN, SARAH C NONHISTONE CHROMOSOMAL PROTEINS OF DROSOPHILA	WASHINGTON UNIVERSITY	SAINT LOUIS	82 MISSOURI	06-83	3	GEN 120,542	186,840
1	R01 GM30319-01A1 21600	SAUERBIER, WALTER TRANSCRIPTION OF UV-IRRADIATED DNA AND CHROMATIN	UNIVERSITY OF MINNESOTA OF MNPLS-ST PAUL	MINNEAPOLIS	82 MINNESOTA	07-83	2	CTY 71,471	97,239
1	R01 GM30332-01 21600	WORCEL, ABRAHAM STRUCTURE OF INTERPHASE AND METAPHASE CHROMOSOMES	UNIVERSITY OF ROCHESTER	ROCHESTER	82 NEW YORK	11-82	4	GEN 71,501	122,932
5	R01 GM30338-02 21600	THOMAS, CHARLES A, JR MOLECULAR CYTOGENETICS	HELICON FOUNDATION	SAN DIEGO	82 CALIFORNIA	01-83	0	GEN 82,328	143,424
5	R01 GM30339-02 21600	WORCEL, ABRAHAM PROPERTIES OF DNA-PROTEIN COMPLEXES OF D.MELANOGASTER	UNIVERSITY OF ROCHESTER	ROCHESTER	82 NEW YORK	11-82	0	CTY 56,256	96,418
7	R01 GM30340-01 21600	COHEN, EDWARD H ORGANIZATION AND EVOLUTION OF DROSOPHILA DNA	FRED HUTCHINSON CANCER RESEARCH CENTER	SEATTLE	81 WASHINGTON	12-82	0	GEN 38,796	45,658
2	R01 GM30363-02 21600	JELINEK, WARREN R MOBILE DISPERSED REPEATS & THEIR RNAS IN MAMMALS	NEW YORK UNIVERSITY	NEW YORK	82 NEW YORK	07-83	2	MGN 116,367	163,497
2	R01 GM30379-02 21600	CLARK, ROGER W EXTRA-CHROMOSOMAL BODIES-STRUCTURE AND REPLICATION	UNIVERSITY OF DENVER	DENVER	82 COLORADO	08-83	2	BBCA 67,749	94,836
7	R01 GM30399-01 21600	ROE, BRUCE A SEQUENCE ANALYSIS OF MAMMALIAN TRNA AND TRNA GENES	UNIVERSITY OF OKLAHOMA NORMAN	NORMAN	81 OKLAHOMA	08-83	0	PC 43,449	59,925

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		GENETICS OF GROWTH AND DIFFERENTIATION SECTION CHROMOSOME ORGANIZATION AND MECHANICS							
1	R13 GM30433-01 GM 21600	VAN HOLDE, KENSAL E GORDON RESEARCH CONFERENCE ON NUCLEOPROTEINS & CHROMATIN	UNIVERSITY OF RHODE ISLAND	KINGSTON	82 RHODE ISLAND	04-83	0 3,000	SSS 3,000	
1	R01 GM30439-01 21600	KLEIN, HANNAH L GENETIC BEHAVIOR OF REPEATED SEQUENCES	NEW YORK UNIVERSITY	NEW YORK	82 NEW YORK	04-83	2 79,460	GEN 106,665	
1	R01 GM30445-01 21600	RECHSTEINER, MARTIN C INJECTION OF CHROMATIN COMPONENTS INTO MAMMALIAN CELLS	UNIVERSITY OF UTAH	SALT LAKE CITY	82 UTAH	04-83	4 50,393	CTY 72,395	
1	R01 GM30600-01 21600	MUSICH, PHILLIP R SPECIFIC DNA-PROTEIN COMPLEXES IN GENOME ORGANIZATION	EAST TENNESSEE STATE UNIVERSITY	JOHNSON CITY	82 TENNESSEE	04-83	2 63,346	MBY 84,406	
1	R01 GM30864-01 AI 21600	DANIELL, ELLEN CHROMATIN PROTEINS: EFFECT ON TRANSCRIPTION IN VITRO	UNIVERSITY OF CALIFORNIA BERKELEY	BERKELEY	82 CALIFORNIA	06-83	1 38,610	EVR 54,788	
1	R13 GM31095-01 GM 21600	ROEDER, ROBERT G 1982 GORDON RESEARCH CONFERENCE ON NUCLEIC ACIDS	GORDON RESEARCH CONFERENCES	KINGSTON	82 RHODE ISLAND	05-83	0 2,000	MGN 2,000	
1	R01 GM31106-01 21600	LIM, JOHNG K DNA REARRANGEMENTS IN DROSOPHILA CHROMOSOMES	UNIVERSITY OF WISCONSIN EAU CLAIRE	EAU CLAIRE	82 WISCONSIN	08-83	2 115,000	GEN 116,739	
1	R01 GM31259-01 21600	ITAKURA, KEIICHI ISOLATION OF NUCLEIC ACIDS USING SYNTHETIC DNA AS PROBE	CITY OF HOPE RESEARCH INSTITUTE	DUARTE	82 CALIFORNIA	07-83	2 79,750	PC 121,577	
2	R01 GM31263-02 21600	RIGGS, ARTHUR D REGULATORY PROTEINS IN E COLI AND EUKARYOTIC CELLS	CITY OF HOPE RESEARCH INSTITUTE	DUARTE	82 CALIFORNIA	11-82	4 135,978	MGN 221,245	
7	R01 GM32019-01 21600	ONORATO-SHOWE, LOUISE C GENE REARRANGEMENTS/THE GENERATION OF ANTIBODY DIVERSITY	CHILDREN'S HOSPITAL OF PHILADELPHIA	PHILADELPHIA	82 PENNSYLVANIA	06-83	2 32,756	MGN 43,070	

**	0	*CENTERS (P50)	0	0
**	1	PROGRAM PROJECTS (P01)	241,132	352,075
**	150	REGULAR PROJECTS (R01)	10,549,920	15,119,120
**	3	ALL OTHERS (P30, P41, R13, R23, R25)	8,000	8,000
**	154	TOTALS	10,799,052	15,479,195

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GENETICS OF GROWTH AND DIFFERENTIATION SECTION										
DEVELOPMENTAL GENETICS										
2	R01 GM07779-20 / 21700	NANNEY, DAVID L GENETIC STUDIES WITH TETRAHYMENA	UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN	URBANA	ILLINOIS	82	02-83	4	106,845	GEN 151,087
5	R01 GM09886-21 / 21700	CHOVNICK, ARTHUR GENETIC STUDIES IN DROSOPHILA MELANOGASTER	UNIVERSITY OF CONNECTICUT STORRS	STORRS	CONNECTICUT	82	03-83	1	142,608	GEN 218,909
2	R01 GM09965-19 / 21700	SANDLER, LAURENCE M CYTOGENETICS OF MEIOSIS AND DEVELOPMENT IN DROSOPHILA	UNIVERSITY OF WASHINGTON	SEATTLE	WASHINGTON	82	11-82	4	50,501	GEN 67,621
5	P01 GM11301-20 / 21700	SHAPIRO, LUCILLE GENETIC CONTROL OF CELL GROWTH AND DEVELOPMENT	YESHIVA UNIVERSITY	NEW YORK	NEW YORK	82	05-83	2	468,023	SSS 867,943
5	R01 GM12953-32 / 21700	SRB, ADRIAN M DEVELOPMENTAL GENETIC STUDIES OF NEUROSPORA	CORNELL UNIVERSITY ITHACA	ITHACA	NEW YORK	81	11-82	0	38,492	GEN 55,167
5	R01 GM15691-15 / 21700	LUCCHESI, JOHN C GENETIC REGULATION IN DROSOPHILA: DOSAGE COMPENSATION	UNIVERSITY OF NORTH CAROLINA CHAPEL HILL	CHAPEL HILL	NORTH CAROLINA	82	08-83	1	106,302	GEN 144,039
5	R01 GM17709-13 / 21700	HARTWELL, LELAND H GENETIC ANALYSIS OF THE EUKARYOTIC CELL CYCLE	UNIVERSITY OF WASHINGTON	SEATTLE	WASHINGTON	82	08-83	2	107,839	MBC 142,804
5	R01 GM18080-09 / 21700	HILLMAN, RALPH GENETIC TRANSLATION AS A CELLULAR CONTROL MECHANISM	TEMPLE UNIVERSITY	PHILADELPHIA	PENNSYLVANIA	81	02-83	0	42,500	GEN 61,625
5	R01 GM18476-09 / 21700	KATZ, EUGENE R DEVELOPMENTAL GENETIC STUDIES ON CELLULAR SLIME MOLDS	STATE UNIVERSITY NEW YORK STONY BROOK	STONY BROOK	NEW YORK	81	04-83	0	60,395	GEN 85,907
5	R01 GM18969-11 / 21700	BRUMBAUGH, JOHN A MECHANISMS MEDIATING MELANOGENIC CONTROL GENE EFFECTS	UNIVERSITY OF NEBRASKA LINCOLN	LINCOLN	NEBRASKA	82	04-83	0	66,670	GEN 92,005
5	R01 GM19175-11 / 21700	MANNEY, THOMAS R GENE FUNCTIONS ASSOCIATED WITH MATING IN YEAST	KANSAS STATE UNIVERSITY	MANHATTAN	KANSAS	82	11-82	0	59,268	GEN 83,598
2	R01 GM19242-11 / 21700	WRIGHT, THEODORE R ONTOGENY AND GENETIC CONTROL OF ENZYME ACTIVITY	UNIVERSITY OF VIRGINIA CHARLOTTESVILLE	CHARLOTTESVILLE	VIRGINIA	82	04-83	4	138,054	GEN 198,378
2	R01 GM19290-10A1 / 21700	ORIAS, EDUARDO CONDITIONAL LETHAL MUTANTS OF TETRAHYMENA	UNIVERSITY OF CALIFORNIA SANTA BARBARA	SANTA BARBARA	CALIFORNIA	82	03-83	3	69,074	GEN 90,165
2	R01 GM19416-11 / 21700	HOCH, JAMES A GENETIC CONTROL OF DEVELOPMENT	SCRIPPS CLINIC AND RESEARCH FOUNDATION	LA JOLLA	CALIFORNIA	82	06-83	4	135,546	MG 220,919
5	P01 GM19521-10 / 21700	CHAPMAN, VERNE M GENETIC STUDY OF MAMMALIAN CONTROL SYSTEMS	ROSWELL PARK MEMORIAL INSTITUTE	BUFFALO	NEW YORK	81	04-83	0	567,502	SSS 781,841
3	P01 GM19521-10S1 / 21700	CHAPMAN, VERNE M GENETIC STUDY OF MAMMALIAN CONTROL SYSTEMS	ROSWELL PARK MEMORIAL INSTITUTE	BUFFALO	NEW YORK	82	04-83	0	186,326	SSS 269,856

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	GENETICS OF GROWTH AND DIFFERENTIATION SECTION DEVELOPMENTAL GENETICS								
5	R01 GM19934-20 21700	KALLMAN, KLAUS D THE GENETIC CONTROL OF SEXUAL MATURITY IN FISH	NEW YORK ZOOLOGICAL SOCIETY	NEW YORK	NEW YORK	82	06-83	0 39,764	GEN 80,615
5	R01 GM19937-10 21700	FRISTROM, JAMES W GENIC/MOLECULAR BASIS OF IMAGINAL DISC MORPHOGENESIS	UNIVERSITY OF CALIFORNIA BERKELEY	BERKELEY	CALIFORNIA	82	12-82	0 82,296	GEN 107,033
5	R01 GM20056-10 21700	HABER, JAMES E CONTROL OF CELL TYPE AND GAMETOGENESIS	BRANDEIS UNIVERSITY	WALTHAM	MASSACHUSETTS	82	12-82	3 78,159	GEN 125,874
5	R01 GM20401-09 21700	POODRY, CLIFTON A GENETIC CONTROL OF DEVELOPMENT, USING DROSOPHILA	UNIVERSITY OF CALIFORNIA SANTA CRUZ	SANTA CRUZ	CALIFORNIA	82	06-83	0 60,754	GEN 79,588
2	R01 GM20964-09 AI 21700	WEIGERT, MARTIN G THE GENETIC CONTROL OF ANTIBODY DIVERSITY AND EXPRESSION	INSTITUTE FOR CANCER RESEARCH	PHILADELPHIA	PENNSYLVANIA	82	12-82	4 161,544	ALY 224,196
5	R01 GM21137-08 21700	KIGER, JOHN A, JR GENETIC STUDIES OF CYCLIC NUCLEOTIDE METABOLISM	UNIVERSITY OF CALIFORNIA DAVIS	DAVIS	CALIFORNIA	82	03-83	3 75,053	GEN 97,730
5	R01 GM21253-08 21700	BOTSTEIN, DAVID MOLECULAR GENETICS OF MORPHOGENETIC PATHWAYS	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	CAMBRIDGE	MASSACHUSETTS	82	05-83	1 84,979	GEN 133,596
5	R01 GM21376-05 21700	BAGSHAW, JOSEPH C TRANSCRIPTIONAL REGULATION IN EMBRYONIC DEVELOPMENT	WAYNE STATE UNIVERSITY	DETROIT	MICHIGAN	81	08-83	0 51,929	MBY 70,969
5	R01 GM21548-08 21700	POSTLETHWAIT, JOHN H GENE AND HORMONE CONTROL OF DROSPHILA EGG PROTEINS	UNIVERSITY OF OREGON	EUGENE	OREGON	82	11-82	2 62,847	GEN 85,346
5	R01 GM21734-08 21700	FREELING, MICHAEL DEVELOPMENTAL GENETICS WITH AN INDUCIBLE GENE SYSTEM	UNIVERSITY OF CALIFORNIA BERKELEY	BERKELEY	CALIFORNIA	82	01-83	3 72,484	GEN 94,489
5	R01 GM21809-08 21700	KESSIN, RICHARD H CONTROL OF AGGREGATION IN D. DISCOIDEUM	HARVARD UNIVERSITY	CAMBRIDGE	MASSACHUSETTS	82	01-83	0 60,869	GEN 93,198
3	P01 GM22221-08 21700	GREEN, MELVIN M GENETIC AND EVOLUTIONARY STUDIES WITH DROSOPHILA	UNIVERSITY OF CALIFORNIA DAVIS	DAVIS	CALIFORNIA	82	07-83	2 340,545	SSS 460,217
5	R01 GM22299-08 21700	NEWTON, AUSTIN REGULATION OF DEVELOPMENT IN CAULOBACTER CRESCENTUS	PRINCETON UNIVERSITY	PRINCETON	NEW JERSEY	82	08-83	3 82,214	MBC 134,831
2	R01 GM22341-07 21700	KAUFFMAN, STUART A SEQUENTIAL DEVELOPMENTAL COMMITMENTS IN DROSOPHILA	UNIVERSITY OF PENNSYLVANIA	PHILADELPHIA	PENNSYLVANIA	82	05-83	2 83,508	GEN 135,058
2	R01 GM22387-07 21700	HERMAN, ROBERT K DEVELOPMENTAL GENETICS OF CAENORHABDITIS ELEGANS	UNIVERSITY OF MINNESOTA OF MNPLS-ST PAUL	MINNEAPOLIS	MINNESOTA	82	02-83	4 55,902	SSS 75,127
2	R01 GM22731-07 21700	STREISINGER, GEORGE GENETIC STUDIES WITH ZEBRA FISH (BRACHYDANIO RERIO)	UNIVERSITY OF OREGON	EUGENE	OREGON	82	02-83	4 154,759	GEN 205,479

T	GRANT NUMBER / PROG-AREA	INVESTIGATOR / PROJECT TITLE	GRANTEE INSTITUTION	CITY	STATE	FY	END-DATE	FUT-YRS AVAILABLE	IRG	SUB DOLLARS DIRECT	SUB DOLLARS TOTAL
	GENETICS OF GROWTH AND DIFFERENTIATION SECTION DEVELOPMENTAL GENETICS										
5	R01 GM22767-06 21700	YAFFE, DAVID CONTROL OF DIFFERENTIATION IN ESTABLISHED CELL LINES	WEIZMANN INSTITUTE OF SCIENCE	REHOVOT	ISRAEL	82	12-82	0	CTY	48,801	48,801
5	R01 GM22878-07 21700	BAILEY, DONALD W GENETIC STABILITY OF MOUSE ZYGOTES IN FROZEN STORAGE	JACKSON LABORATORY	BAR HARBOR	MAINE	82	03-83	3	MGN	92,033	129,099
2	R01 GM23167-07 21700	TOBIN, ELAINE M PHYTOCHROME REGULATION OF SPECIFIC MRNA SPECIES	UNIVERSITY OF CALIFORNIA LOS ANGELES	LOS ANGELES	CALIFORNIA	82	07-83	4	CTY	86,541	118,285
5	R01 GM23345-07 21700	BAKER, BRUCE S GENETICS OF MEIOSIS AND DEVELOPMENT IN DROSOPHILA	UNIVERSITY OF CALIFORNIA SAN DIEGO	LA JOLLA	CALIFORNIA	82	06-83	0	GEN	115,325	153,249
5	R01 GM23468-06 21700	CLINE, THOMAS W REGULATION OF SEX-SPECIFIC GENES IN DROSOPHILA	PRINCETON UNIVERSITY	PRINCETON	NEW JERSEY	82	12-82	2	GEN	60,601	97,866
5	R01 GM23617-06 21700	BEWLEY, GLENN C REGULATION OF GENE EXPRESSION DURING DEVELOPMENT	NORTH CAROLINA STATE UNIVERSITY RALEIGH	RALEIGH	NORTH CAROLINA	82	12-82	0	GEN	47,433	66,406
5	R01 GM23635-05 21700	DI BERARDINO, MARIE A NORMAL DIFFERENTIATION AND CARCINOGENESIS	MEDICAL COLLEGE OF PENNSYLVANIA	PHILADELPHIA	PENNSYLVANIA	82	03-83	1	CBY	76,038	117,144
5	R01 GM23707-05 21700	BAKER, WILLIAM K GENETIC CONTROL OF DIFFERENTIAL CELL FUNCTION	UNIVERSITY OF UTAH	SALT LAKE CITY	UTAH	81	12-82	0	GEN	38,480	56,566
2	R01 GM24019-06 21700	COHEN, LEONARD H THE ROLES OF HISTONE SUBTYPES IN DEVELOPMENT	INSTITUTE FOR CANCER RESEARCH	PHILADELPHIA	PENNSYLVANIA	82	03-83	2	MBY	95,330	134,927
5	R01 GM24040-05 21700	MILLS, DALLICE I GENE EXPRESSION DURING MEIOSIS	OREGON STATE UNIVERSITY	CORVALLIS	OREGON	81	08-83	0	GEN	53,767	69,897
5	R01 GM24096-06 21700	GUILFOYLE, THOMAS J REGULATION OF RNA POLYMERASES DURING DEVELOPMENT	UNIVERSITY OF MINNESOTA OF MNPLS-ST PAUL	MINNEAPOLIS	MINNESOTA	82	07-83	1	CTY	49,445	68,729
5	R01 GM24185-06 21700	PETRI, WILLIAM H CONTROL OF DIFFERENTIATION: DROSOPHILA CHORION GENES	BOSTON COLLEGE	CHESTNUT HILL	MASSACHUSETTS	82	08-83	0	GEN	58,552	86,071
5	R01 GM24225-06 21700	KAFATOS, FOTIS C REGULATION AND EVOLUTION OF MULTIGENE FAMILIES	HARVARD UNIVERSITY	CAMBRIDGE	MASSACHUSETTS	82	06-83	2	MBY	54,631	84,132
5	R01 GM24299-06 21700	KAUFMAN, THOMAS C THE GENETIC CONTROL OF MORPHOGENESIS IN DROSOPHILA	INDIANA UNIVERSITY BLOOMINGTON	BLOOMINGTON	INDIANA	82	07-83	0	GEN	68,263	98,981
5	R01 GM24572-05 21700	PELLEGRINI, MARIA C EXPRESSION AND ORGANIZATION OF RIBOSOMAL PROTEIN GENES	UNIVERSITY OF SOUTHERN CALIFORNIA	LOS ANGELES	CALIFORNIA	82	12-82	1	GEN	61,315	88,600
5	R01 GM24756-05 21700	RUBENSTEIN, IRWIN MOLECULAR ORGANIZATION OF THE ZEIN MULTIGENE FAMILY	UNIVERSITY OF MINNESOTA OF MNPLS-ST PAUL	MINNEAPOLIS	MINNESOTA	82	07-83	3	GEN	70,680	98,245

T GRANT NUMBER / PROG-AREA	INVESTIGATOR / PROJECT TITLE	GRANTEE INSTITUTION	CITY	FY / STATE	END-DATE	FUT-YRS AVAILABLE	IRG SUB DOLLARS DIRECT	TOTAL
GENETICS OF GROWTH AND DIFFERENTIATION SECTION								
DEVELOPMENTAL GENETICS								
5 R01 GM24764-05	GAREN, ALAN	YALE UNIVERSITY		82	12-82	3		GEN
21760	HORMONAL CONTROLS OF DROSOPHILA DEVELOPMENT		NEW HAVEN	CONNECTICUT			72,092	113,905
5 R01 GM25176-03	BORGIA, PETER T	SOUTHERN ILLINOIS UNIVERSITY CARBONDALE		80	07-83	0		MBC
21700	REGULATORY ROLE OF CYCLIC NUCLEOTIDES IN MUCOR		CARBONDALE	ILLINOIS			22,764	30,148
5 R01 GM25255-05	DOANE, WINIFRED W	ARIZONA STATE UNIVERSITY		82	12-82	1		GEN
21700	GENETIC REGULATORY MECHANISMS IN CELLULAR DIFFERENTIATIO		TEMPE	ARIZONA			102,773	153,669
5 R01 GM25327-05	JACOBS-LORENA, MARCELO	CASE WESTERN RESERVE UNIVERSITY		82	03-83	1		MBY
21700	BIOCHEMICAL STUDIES OF DROSOPHILA OOGENESIS		CLEVELAND	OHIO			77,368	116,214
2 R01 GM25399-04	KIDWELL, MARGARET G	BROWN UNIVERSITY		82	11-82	2		GEN
21700	GENETIC ASPECTS OF HYBRID DYSGENESIS IN DROSOPHILA		PROVIDENCE	RHODE ISLAND			62,750	97,435
2 R01 GM25553-04A1	ANGERER, ROBERT C	UNIVERSITY OF ROCHESTER		82	02-83	4		MBY
21700	IN SITU LOCALIZATION OF INFORMATIONAL EMBRYO RNAS		ROCHESTER	NEW YORK			118,372	186,735
5 R01 GM25624-05	HICKS, JAMES B	COLD SPRING HARBOR LABORATORY		82	06-83	3		GEN
21700	REGULATION AND INTERCONVERSION OF MATING TYPES IN YEAST		COLD SPRING HARB	NEW YORK			119,885	211,172
2 R01 GM25644-05	NEWTON, AUSTIN	PRINCETON UNIVERSITY		82	06-83	4		MG
21700	GENETICS OF CELL CYCLE AND DEVELOPMENT IN CAULOBACTER		PRINCETON	NEW JERSEY			65,039	104,104
5 R01 GM25678-05	KLAR, AMAR J	COLD SPRING HARBOR LABORATORY		82	06-83	3		GEN
21700	MOLECULAR MECHANISMS OF DIFFERENTIATION		COLD SPRING HARB	NEW YORK			88,675	155,587
2 R01 GM25902-04	WEISSMAN, IRVING L	STANFORD UNIVERSITY		82	07-83	2		MGN
21700	HISTOCOMPATIBILITY AND ALLORECOGNITION IN TUNICATES		STANFORD	CALIFORNIA			76,152	118,696
2 R01 GM25966-04	MITCHELL, HERSCHEL K	CALIFORNIA INSTITUTE OF TECHNOLOGY		82	03-83	2		GEN
21700	BIOCHEMICAL GENETICS OF DEVELOPMENT IN DROSOPHILA		PASADENA	CALIFORNIA			69,284	102,300
2 R01 GM25976-04	SCHEDL, PAUL	PRINCETON UNIVERSITY		82	11-82	4		GEN
21700	GENE EXPRESSION DURING D MELANOGASTER EMBRYOGENESIS		PRINCETON	NEW JERSEY			72,576	115,428
5 R01 GM26139-03	GRAINGER, ROBERT M	UNIVERSITY OF VIRGINIA CHARLOTTESVILLE		81	08-83	0		GEN
21700	THE ROLE OF OOCYTE PROTEINS AND RNAS IN DEVELOPMENT		CHARLOTTESVILLE	VIRGINIA			50,107	71,080
5 R01 GM26200-04	BAKER, BRUCE S	UNIVERSITY OF CALIFORNIA SAN DIEGO		82	03-83	1		GEN
21700	GENETIC CONTROL OF RECOMBINATION IN DROSOPHILA		LA JOLLA	CALIFORNIA			26,793	34,866
5 R01 GM26207-03	MARONI, GUSTAVO P	UNIVERSITY OF NORTH CAROLINA CHAPEL HILL		81	03-83	0		GEN
21700	REGULATION OF ALCOHOL DEHYDROGENASE IN DROSOPHILA		CHAPEL HILL	NORTH CAROLINA			30,555	43,999
5 R01 GM26693-03	BONNER, JAMES J	INDIANA UNIVERSITY BLOOMINGTON		81	11-82	0		GEN
21700	MOLECULAR DISSECTION OF GENE REGULATION IN DROSOPHILA		BLOOMINGTON	INDIANA			47,385	64,960

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	GENETICS OF GROWTH AND DIFFERENTIATION SECTION									
	DEVELOPMENTAL GENETICS									
3	R01 GM26693-03S1 21700	BONNER, JAMES J MOLECULAR DISSECTION OF GENE REGULATION IN DROSOPHILA	INDIANA UNIVERSITY BLOOMINGTON	BLOOMINGTON	82 INDIANA	11-82	0	13,960	GEN	20,242
2	R01 GM26810-04 21700	LINDSLEY, DAN L GAMETOGENESIS IN DROSOPHILA	UNIVERSITY OF CALIFORNIA SAN DIEGO	LA JOLLA	82 CALIFORNIA	05-83	2	122,368	GEN	159,992
5	R01 GM27195-03 21700	DENELL, ROBIN E A DEVELOPMENTAL GENETIC ANALYSIS OF THE CELL SURFACE	KANSAS STATE UNIVERSITY	MANHATTAN	82 KANSAS	12-82	0	40,178	GEN	56,633
5	R01 GM27250-27 21700	GLUECKSOHN-WAELSCH, SALOME GENETIC CONTROL OF MAMMALIAN DIFFERENTIATION	YESHIVA UNIVERSITY	NEW YORK	82 NEW YORK	03-83	0	129,285	MGN	240,470
5	R01 GM27310-03 21700	DOTTIN, ROBERT P DEVELOPMENTAL CONTROL OF DICTYOSTELIUM GENE EXPRESSION	JOHNS HOPKINS UNIVERSITY	BALTIMORE	82 MARYLAND	11-82	0	65,349	MBY	95,234
2	R01 GM27652-04 21700	PALATNIK, CARL M DEVELOPMENTALLY REGULATED MRNAS IN DICTYOSTELIUM	STATE UNIVERSITY NEW YORK	STONY BROOK STONY BROOK	82 NEW YORK	06-83	2	95,392	CTY	133,267
5	R01 GM27703-03 21700	ALLEN, SALLY L NUCLEAR DIFFERENTIATION IN TETRAHYMENA	UNIVERSITY OF MICHIGAN AT	ANN ARBOR ANN ARBOR	82 MICHIGAN	03-83	0	66,497	GEN	105,065
5	R01 GM27712-03 21700	KABACK, DAVID B TRANSCRIPTION DURING MEIOSIS AND SPORULATION IN YEAST	UNIVERSITY OF MEDICINE & DENTISTRY OF NJ	NEWARK	82 NEW JERSEY	03-83	0	68,024	GEN	113,515
5	R01 GM27864-03 21700	KARRER, KATHLEEN M GERM LINE SPECIFIC DNA SEQUENCES IN TETRAHYMENA	BRANDEIS UNIVERSITY	WALTHAM	82 MASSACHUSETTS	03-83	0	44,072	GEN	71,397
5	R01 GM27866-03 21700	COURTRIGHT, JAMES B GENETIC REGULATION OF TISSUE-SPECIFIC GENE EXPRESSION	MARQUETTE UNIVERSITY	MILWAUKEE	82 WISCONSIN	08-83	0	35,970	GEN	47,319
5	R01 GM27875-03 21700	SPRADLING, ALLAN C NORMAL AND MUTANT CHORION GENES OF DROSOPHILA	CARNEGIE INSTITUTION OF WASHINGTON D C	BALTIMORE	82 MARYLAND	03-83	0	60,847	GEN	91,283
5	R01 GM28005-03 21700	REED, STEVEN I THE CONTROL OF CELL DIVISION IN YEAST	UNIVERSITY OF CALIFORNIA SANTA BARBARA	SANTA BARBARA	82 CALIFORNIA	06-83	0	61,996	GEN	84,568
5	R01 GM28075-03 21700	MEYEROWITZ, ELLIOT M GENE STRUCTURE AND FUNCTION IN ANIMAL DEVELOPMENT	CALIFORNIA INSTITUTE OF TECHNOLOGY	PASADENA	82 CALIFORNIA	06-83	0	73,516	GEN	107,820
5	R01 GM28228-03 21700	GUILD, GREGORY M EUKARYOTIC GENES: STRUCTURE, FUNCTION, AND REGULATION	UNIVERSITY OF PENNSYLVANIA	PHILADELPHIA	82 PENNSYLVANIA	06-83	0	67,896	GEN	110,026
5	R01 GM28311-02 21700	EDGAR, ROBERT S MOLECULAR GENETIC STUDIES OF THE NEMATODE CUTICLE	UNIVERSITY OF CALIFORNIA SANTA CRUZ	SANTA CRUZ	82 CALIFORNIA	08-83	1	92,716	GEN	134,531
5	R01 GM28444-02 21700	ORIAS, EDUARDO MATING TYPE DETERMINATION IN TETRAHYMENA	UNIVERSITY OF CALIFORNIA SANTA BARBARA	SANTA BARBARA	82 CALIFORNIA	11-82	1	74,754	MG	97,928

TABLE-4 RESEARCH GRANTS ACTIVE AS OF 09-30-82 BY PROGRAM AREA AND GRANT NUMBER

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GENETICS OF GROWTH AND DIFFERENTIATION SECTION								
DEVELOPMENTAL GENETICS								
5 R01 GM28557-02 21700	DE RIEL, JON K MOLECULAR BIOLOGY OF ERYTHROID DIFFERENTIATION	TEMPLE UNIVERSITY	PHILADELPHIA	82 PENNSYLVANIA	12-82	1	61,073	MBY 87,691
5 R01 GM28630-02 21700	BENDER, WELCOME W MOLECULAR GENETICS OF TWO DROSOPHILA LOCI	HARVARD UNIVERSITY	BOSTON	82 MASSACHUSETTS	11-82	1	51,912	GEN 100,925
5 R01 GM28669-02 21700	GELBART, WILLIAM M PATTERN FORMATION AND GENE ORGANIZATION IN DROSOPHILA	HARVARD UNIVERSITY	CAMBRIDGE	82 MASSACHUSETTS	11-82	2	63,263	GEN 94,725
5 R01 GM28836-02 21700	DODGSON, JERRY ISOLATION AND EXPRESSION OF ERYTHROID-SPECIFIC GENES	MICHIGAN STATE UNIVERSITY	EAST LANSING	81 MICHIGAN	01-83	0	47,575	GEN 66,605
5 R01 GM28954-02 21700	WHITE, KALPANA P DEVELOPMENTAL GENETICS OF NEUROGENESIS	BRANDEIS UNIVERSITY	WALTHAM	82 MASSACHUSETTS	03-83	1	42,099	GEN 66,030
5 R01 GM28972-02 21700	MARSH, J LAWRENCE DEVELOPMENTAL CONTROL OF GENE EXPRESSION IN DROSOPHILA	UNIVERSITY OF CALIFORNIA IRVINE	IRVINE	82 CALIFORNIA	03-83	1	67,474	GEN 86,717
5 R01 GM29093-02 21700	ARTAVANIS-TSAKONAS, SPYRIDON GENE EXPRESSION IN EUKARYOTIC DEVELOPMENT	YALE UNIVERSITY	NEW HAVEN	82 CONNECTICUT	03-83	1	58,295	GEN 89,187
5 R01 GM29178-02 21700	EMMONS, SCOTT W GENOME STRUCTURE AND FUNCTION IN THE NEMATODE CAENORHABD	YESHIVA UNIVERSITY	NEW YORK	82 NEW YORK	03-83	1	67,742	GEN 122,087
5 R01 GM29182-02 21700	ESPOSITO, ROCHELLE E MEIOTIC RECOMBINATION AND SEGREGATION IN YEAST	UNIVERSITY OF CHICAGO	CHICAGO	82 ILLINOIS	03-83	3	99,826	GEN 155,587
5 R01 GM29307-02 21700	BRIGGS, ROBERT W A TEMPERATURE SENSITIVE, MATERNAL-EFFECT MUTATION	INDIANA UNIVERSITY BLOOMINGTON	BLOOMINGTON	82 INDIANA	07-83	1	27,042	GEN 39,211
5 R01 GM29354-02 21700	FRISTROM, JAMES W THE ACTIN MULTIGENE FAMILY OF DROSOPHILA MELANOGASTER	UNIVERSITY OF CALIFORNIA BERKELEY	BERKELEY	82 CALIFORNIA	07-83	1	71,731	GEN 101,786
5 R01 GM29357-02 21700	FYRBERG, ERIC A ANALYSIS OF GENE EXPRESSION DURING DROSOPHILA MYOGENESIS	JOHNS HOPKINS UNIVERSITY	BALTIMORE	82 MARYLAND	06-83	1	41,932	GEN 61,398
1 R01 GM29392-01 21700	REGIER, JEROME C CELLULAR DIFFERENTIATION AND EVOLUTION OF GENE FAMILIES	NORTHWESTERN UNIVERSITY	EVANSTON	82 ILLINOIS	01-83	2	85,902	GEN 101,445
5 R01 GM29473-02 21700	TATCHELL, KELLY G REGULATION OF THE SILENT MATING TYPE GENES IN YEAST	UNIVERSITY OF PENNSYLVANIA	PHILADELPHIA	82 PENNSYLVANIA	06-83	1	71,835	GEN 105,528
1 R01 GM29687-01 21700	DODGSON, JERRY B HISTONE GENE ORGANIZATION AND EXPRESSION IN DEVELOPMENT	MICHIGAN STATE UNIVERSITY	EAST LANSING	82 MICHIGAN	08-83	2	46,414	GEN 62,492
5 R01 GM29709-02 21700	KAUFMAN, THOMAS C MOLECULAR ANALYSIS OF DEVELOPMENT-REGULATING GENES	INDIANA UNIVERSITY BLOOMINGTON	BLOOMINGTON	82 INDIANA	08-83	1	49,899	GEN 71,004

GENETICS OF GROWTH AND DIFFERENTIATION SECTION
DEVELOPMENTAL GENETICS

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1	R01 GM29722-01 AG 21700	GOODMAN, REBA DNA METHYLATION AND DIPTERAN DIFFERENTIATION	COLUMBIA UNIVERSITY	NEW YORK	82 NEW YORK	08-83	2	65,950	GEN 107,237
7	R01 GM29733-01 21700	SCHMIDT, ROBERT R GENE-ENZYME CONTROL IN EUCARYOTIC CELL CYCLE	UNIVERSITY OF FLORIDA	GAINESVILLE	81 FLORIDA	12-82	0	54,471	MBY 78,229
5	R01 GM29810-02 21700	WALLACE, BRUCE EVOLUTIONARY AND DEVELOPMENTAL GENETICS OF DROSOPHILA	VIRGINIA POLYTECHNIC INST AND ST UNIV	BLACKSBURG	82 VIRGINIA	03-83	1	30,072	GEN 43,003
1	R01 GM30132-01 21700	ANDERSON, ROBERT P THE GENETIC SPECIFICATION OF NEMATODE MUSCLE	UNIVERSITY OF WISCONSIN MADISON	MADISON	82 WISCONSIN	01-83	2	89,471	GEN 110,489
5	R13 GM30337-03 21700	HICKS, JAMES B BACTERIAL GENETICS	COLD SPRING HARBOR LABORATORY	COLD SPRING HARB	82 NEW YORK	04-83	0	30,735	G3D 30,735
1	R01 GM30347-01 21700	FRANKEL, JACK S ONTOGENETIC PATTERNS OF ENZYME LOCUS EXPRESSION	HOWARD UNIVERSITY	WASHINGTON	82 DIST OF COL	08-83	2	28,065	GEN 47,373
2	R01 GM30349-02 21700	TIMBERLAKE, WILLIAM E REGULATION OF THE LACTASE GENE OF ASPERGILLUS	UNIVERSITY OF CALIFORNIA DAVIS	DAVIS	82 CALIFORNIA	07-83	2	88,266	GEN 119,048
1	R01 GM30702-01 21700	MEYER, BARBARA J ANALYSIS OF NEMATODE SEX DETERMINATION	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	CAMBRIDGE	82 MASSACHUSETTS	08-83	2	101,638	GEN 126,242
1	R01 GM30756-01 CA 21700	O'FARRELL, PATRICK CELLULAR DETERMINANTS OF DEVELOPMENTAL STATE	UNIVERSITY OF CALIFORNIA SAN FRANCISCO	SAN FRANCISCO	82 CALIFORNIA	04-83	2	75,853	CTY 97,644
1	R01 GM30870-01 21700	BLUMENTHAL, THOMAS DEVELOPMENTALLY REGULATED GENES OF C. ELEGANS	INDIANA UNIVERSITY BLOOMINGTON	BLOOMINGTON	82 INDIANA	08-83	4	121,600	GEN 167,343
1	R01 GM30962-01 21700	LONG, SHARON R EARLY GENE EXPRESSION IN THE RHIZOBIUM-LEGUME SYMBIOSIS	STANFORD UNIVERSITY	STANFORD	82 CALIFORNIA	06-83	2	82,038	MG 115,120
1	R01 GM30997-01 21700	CHALFIE, MARTIN GENETIC ANALYSIS OF NEMATODE CELL DIFFERENTIATION	COLUMBIA UNIVERSITY	NEW YORK	82 NEW YORK	07-83	2	91,922	GEN 121,142
1	R01 GM31006-01 21700	PRINGLE, JOHN R GENETIC STUDY OF THE YEAST CELL CYCLE	UNIVERSITY OF MICHIGAN AT ANN ARBOR	ANN ARBOR	82 MICHIGAN	06-83	2	70,129	GEN 106,342
1	R01 GM31023-01 21700	LATEN, HOWARD M CYTOKININ FUNCTION AND SYNTHESIS IN YEAST	LOYOLA UNIVERSITY OF CHICAGO	CHICAGO	82 ILLINOIS	08-83	2	52,724	MBC 72,492
1	R01 GM31104-01 NS 21700	GREENSPAN, RALPH J DEVELOPMENTAL GENETICS OF NERVOUS SYSTEM IN DROSOPHILA	PRINCETON UNIVERSITY	PRINCETON	82 NEW JERSEY	06-83	2	83,726	GEN 117,471
1	R01 GM31181-01 21700	DIMOND, RANDALL L 2-MANNOSIDASE REGULATION DURING SLIME MOLD DEVELOPMENT	UNIVERSITY OF WISCONSIN MADISON	MADISON	82 WISCONSIN	06-83	2	49,474	MBY 67,308

T	GRANT NUMBER / PROG-AREA	INVESTIGATOR / PROJECT TITLE	GRANTEE INSTITUTION	CITY	STATE	FY	END-DATE	FUT-YRS AVAILABLE	DIRECT	IRG SUB DOLLARS TOTAL
GENETICS OF GROWTH AND DIFFERENTIATION SECTION										
	DEVELOPMENTAL GENETICS									
1	R01 GM31226-01	CHUNG, STEPHEN S	UNIVERSITY OF ILLINOIS MEDICAL CENTER	CHICAGO	ILLINOIS	82	06-83	2	59,036	CTY 93,277
	21700	CELL-CELL CONTACT REGULATED GENES IN DICTYOSTELIUM								
1	R01 GM31281-01	NADAL-GINARD, BERNARDO	YESHIVA UNIVERSITY	NEW YORK	NEW YORK	82	06-83	4	103,385	MBY 146,818
	21700	MYOSIN HEAVY CHAIN EXPRESSION IN A MUSCLE CELL LINE								
7	R01 GM31311-01	HEREFORD, LYNNA M	SIDNEY FARBER CANCER INSTITUTE	BOSTON	MASSACHUSETTS	82	11-82	0	37,000	GEN 59,436
	21700	THE YEAST CELL CYCLE								
1	R01 GM31656-01	PAIGEN, KENNETH	UNIVERSITY OF CALIFORNIA BERKELEY	BERKELEY	CALIFORNIA	82	04-83	1	278,743	SSS 364,719
	21700	STUDIES OF MAMMALIAN GENE REGULATION								
7	R01 GM32018-01	ORDAHL, CHARLES P	UNIVERSITY OF CALIFORNIA SAN FRANCISCO	SAN FRANCISCO	CALIFORNIA	82	06-83	3	75,799	GEN 96,795
	21700	TRANSCRIPTION OF MUSCLE-SPECIFIC GENES IN MYOGENESIS								
7	R01 GM32092-01	SRIDHARA, S	TEXAS TECH UNIVERSITY	LUBBOCK	TEXAS	82	06-83	1	36,398	GEN 47,317
	21700	GENE ACTIVITY DURING INSECT METAMORPHOSIS								

**	0	*CENTERS (P50)		
**	4	PROGRAM PROJECTS (P01)	0	0
**	113	REGULAR PROJECTS (R01)	1,562,396	2,379,857
**	1	ALL OTHERS (P30, P41, R13, R23, R25)	8,253,554	11,979,202
**	118	TOTALS	30,735	30,735
			9,846,685	14,389,794

TABLE-4 RESEARCH GRANTS ACTIVE AS OF 09-30-82 BY PROGRAM AREA AND GRANT NUMBER

T	GRANT NUMBER / PROG-AREA	INVESTIGATOR / PROJECT TITLE	GRANTEE INSTITUTION	CITY	FY / STATE	END-DATE	FUT-YRS AVAILABLE	DIRECT	IRG / SUB	DOLLARS TOTAL
		GENETICS OF GROWTH AND DIFFERENTIATION SECTION								
		CONTROL OF GENE EXPRESSION								
5	R01 GM06048-24 / 21750	MAAS, WERNER K REGULATION OF ENZYME SYNTHESIS IN BACTERIA	NEW YORK UNIVERSITY	NEW YORK	82 NEW YORK	12-82	1	73,110	MBC	109,299
2	R01 GM07446-24 / 21750	MAGASANIK, BORIS REGULATION AND FUNCTION OF GLUTAMINE SYNTHETASE	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	CAMBRIDGE	82 MASSACHUSETTS	08-83	4	104,000	MBC	145,272
5	R01 GM08995-21 / 21750	METZENBERG, ROBERT L, JR THE GENETIC CONTROL OF PROTEIN SYNTHESIS	UNIVERSITY OF WISCONSIN MADISON	MADISON	82 WISCONSIN	12-82	1	59,405	GEN	83,518
2	R01 GM09541-21 / 21750	GILBERT, WALTER ROLE OF RIBONUCLEIC ACID IN PROTEIN SYNTHESIS	HARVARD UNIVERSITY	CAMBRIDGE	82 MASSACHUSETTS	07-83	1	232,291	GEN	357,728
5	R01 GM09738-20 / 21750	YANOFSKY, CHARLES GENETIC/BIOCHEMICAL STUDY OF TRYPTOPHAN SYNTHETASE	STANFORD UNIVERSITY	STANFORD	82 CALIFORNIA	04-83	1	98,050	MBC	150,304
5	R01 GM10317-18 / 21750	GREENE, RONALD C BIOCHEMISTRY OF SULFONIUM COMPOUNDS	DUKE UNIVERSITY	DURHAM	80 NORTH CAROLINA	08-83	0	41,477	PC	50,137
5	R01 GM10390-19 / 21750	FURTH, JOHN J RNA METABOLISM IN MAMMALIAN CELLS	UNIVERSITY OF PENNSYLVANIA	PHILADELPHIA	82 PENNSYLVANIA	07-83	0	72,346	PC	117,853
5	R01 GM10999-18 / 21750	LINGREL, JERRY B REGULATION OF GENE EXPRESSION IN MAMMALIAN CELLS	UNIVERSITY OF CINCINNATI	CINCINNATI	82 OHIO	06-83	3	84,244	BIO	116,422
5	R01 GM11895-19 / 21750	HALL, BENJAMIN D EXPRESSION AND REGULATION OF CYTOCHROME C GENES	UNIVERSITY OF WASHINGTON	SEATTLE	82 WASHINGTON	04-83	2	100,237	GEN	133,539
5	R01 GM11899-19 / 21750	MC FALL, ELIZABETH STUDIES ON CONTROL MECHANISMS IN ENZYME BIOSYNTHESIS	NEW YORK UNIVERSITY	NEW YORK	82 NEW YORK	12-82	2	76,485	GEN	114,031
2	R01 GM12522-18 / 21750	UMBARGER, H EDWIN ENZYMIC MECHANISMS IN BIOSYNTHETIC PATHWAYS	PURDUE UNIVERSITY WEST LAFAYETTE	WEST LAFAYETTE	82 INDIANA	11-82	4	158,607	MG	220,069
5	R01 GM12702-18 / 21750	SHERMAN, FRED GENETIC CONTROL OF CYTOCHROME C IN YEAST	UNIVERSITY OF ROCHESTER	ROCHESTER	82 NEW YORK	12-82	1	163,194	GEN	242,644
2	R01 GM13017-18 / 21750	BECKWITH, JONATHAN R REGULATION OF RBS & OTHER CAMP-DEPENDENT GENES IN E COLI	HARVARD UNIVERSITY	BOSTON	82 MASSACHUSETTS	08-83	4	63,527	MG	119,189
5	R01 GM13235-18 / 21750	BERG, PAUL MECHANISMS AND REGULATION OF GENE EXPRESSION	STANFORD UNIVERSITY	STANFORD	82 CALIFORNIA	08-83	2	200,827	EVR	333,815
5	R01 GM14652-16 / 21750	LEE, NANCY L GENETIC CONTROL OF PROTEIN SYNTHESIS IN E. COLI	UNIVERSITY OF CALIFORNIA SANTA BARBARA	SANTA BARBARA	82 CALIFORNIA	12-82	1	67,982	MG	89,056
2	R01 GM15142-13A1 / 21750	BREMER, HANS REGULATION OF BACTERIAL GROWTH	UNIVERSITY OF TEXAS DALLAS	RICHARDSON	82 TEXAS	06-83	2	76,922	MG	100,240

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GENETICS OF GROWTH AND DIFFERENTIATION SECTION CONTROL OF GENE EXPRESSION								
5 R01 GM15381-12 21750	NIERLICH, DONALD P REGULATION OF RNA SYNTHESIS	UNIVERSITY OF CALIFORNIA LOS ANGELES	LOS ANGELES	79 CALIFORNIA	12-82	0	44,308	MBC 57,888
5 R01 GM17078-14 21750	ECHOLS, G HARRISON, JR GENETIC & CHEMICAL STUDIES OF PHAGE LAMBDA DEVELOPMENT	UNIVERSITY OF CALIFORNIA BERKELEY	BERKELEY	82 CALIFORNIA	08-83	1	127,691	VR 181,194
2 R01 GM17152-14 21750	FREUNDLICH, MARTIN MOLECULAR MECHANISMS IN MULTIVALENT REPRESSION	STATE UNIVERSITY NEW YORK STONY BROOK	STONY BROOK	82 NEW YORK	08-83	2	67,042	MG 96,569
5 R01 GM18277-12 21750	SCHLEIF, ROBERT F REGULATORY MECHANISMS OF THE ARABINOSE OPERON	BRANDEIS UNIVERSITY	WALTHAM	82 MASSACHUSETTS	04-83	1	74,885	MBC 120,694
5 R01 GM18386-13 21750	GEIDUSCHEK, E PETER NUCLEIC ACIDS AND NUCLEOPROTEINS	UNIVERSITY OF CALIFORNIA SAN DIEGO	LA JOLLA	82 CALIFORNIA	08-83	2	173,448	MG 228,576
5 R01 GM18568-10 21750	LOSICK, RICHARD M ROLE OF RNA POLYMERASE IN BACTERIAL DIFFERENTIATION	HARVARD UNIVERSITY	CAMBRIDGE	82 MASSACHUSETTS	01-83	2	87,986	MBC 135,498
5 R01 GM18586-11 21750	SALSER, WINSTON A NUCLEOTIDE SEQUENCING METHODS FOR ONCOGENIC VIRUSES	UNIVERSITY OF CALIFORNIA LOS ANGELES	LOS ANGELES	82 CALIFORNIA	02-83	2	75,140	GEN 97,968
2 R01 GM18835-12 21750	SCHEFFLER, IMMO E GENETICS AND BIOCHEMISTRY OF MAMMALIAN CELLS IN CULTURE	UNIVERSITY OF CALIFORNIA SAN DIEGO	LA JOLLA	82 CALIFORNIA	08-83	4	86,650	MGN 105,038
5 R01 GM18904-11 21750	HALVORSON, HARLYN O REGULATION OF DIFFERENTIATION IN BACILLUS SPORES	BRANDEIS UNIVERSITY	WALTHAM	82 MASSACHUSETTS	12-82	2	85,574	MBC 138,010
5 R01 GM19168-11 21750	SONENSHEIN, ABRAHAM L ROLE OF RNA POLYMERASE IN BACTERIAL DIFFERENTIATION	TUFTS UNIVERSITY	BOSTON	82 MASSACHUSETTS	01-83	2	52,574	MBC 82,745
5 R01 GM19670-10 21750	REZNIKOFF, WILLIAM S PROMOTER AND TRANSPOSON STRUCTURAL STUDIES	UNIVERSITY OF WISCONSIN MADISON	MADISON	82 WISCONSIN	08-83	2	80,178	MBC 114,655
5 R01 GM19673-11 21750	DOI, ROY H ROLE OF RNA POLYMERASE IN BACTERIAL DIFFERENTIATION	UNIVERSITY OF CALIFORNIA DAVIS	DAVIS	82 CALIFORNIA	08-83	3	66,863	MG 90,733
5 R01 GM19963-10 21750	GOLD, LAWRENCE M REGULATION OF BACTERIOPHAGE T4 GENE EXPRESSION	UNIVERSITY OF COLORADO AT BOULDER	BOULDER	82 COLORADO	12-82	0	121,619	VR 169,659
5 R01 GM20069-10 21750	SMITHIES, OLIVER GENETIC CONTROL OF PROTEIN STRUCTURE AND SYNTHESIS	UNIVERSITY OF WISCONSIN MADISON	MADISON	82 WISCONSIN	12-82	0	168,300	GEN 238,519
5 R01 GM20173-10 21750	MARRS, BARRY L THE REGULATION OF BACTERIAL MEMBRANE FORMATION	ST. LOUIS UNIVERSITY	SAINT LOUIS	82 MISSOURI	07-83	3	89,828	MG 134,742
5 R01 GM20784-08 21750	WHITELEY, HELEN R REGULATION OF RNA SYNTHESIS	UNIVERSITY OF WASHINGTON	SEATTLE	82 WASHINGTON	05-83	1	62,413	PC 83,571

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GENETICS OF GROWTH AND DIFFERENTIATION SECTION												
CONTROL OF GENE EXPRESSION												
5	R01 GM20868-09 21750	BOURGEOIS-COHN, SUZANNE STUDIES OF REGULATION IN E. COLI EXTENDED TO LYMPHOMAS	SALK INSTITUTE FOR BIOLOGICAL STUDIES	LA JOLLA	CALIFORNIA	82	11-82	1	137,668	GEN		223,022
5	R01 GM21120-08 21750	CARUTHERS, MARVIN H CHROMOSOME DNA REGULATORY REGIONS	UNIVERSITY OF COLORADO AT BOULDER	BOULDER	COLORADO	82	11-82	0	91,841	PC		125,353
2	R01 GM21168-09 21750	CAPECCHI, MARIO R THE CONTROL, ASSEMBLY AND TERMINATION OF PROTEINS	UNIVERSITY OF UTAH	SALT LAKE CITY	UTAH	82	11-82	4	120,562	MGN		165,572
5	R01 GM21198-14 21750	LESSIE, THOMAS G BIOCHEMICAL VERSATILITY OF PSEUDOMONAS CEPACIA	UNIVERSITY OF MASSACHUSETTS AMHERST	AMHERST	MASSACHUSETTS	82	03-83	2	51,098	MBC		74,092
5	R01 GM21307-09 21750	KUSTU, SYDNEY G GENETIC STUDIES OF GLUTAMINE SYNTHETASE IN BACTERIA	UNIVERSITY OF CALIFORNIA DAVIS	DAVIS	CALIFORNIA	82	05-83	0	68,780	MBC		90,102
5	R01 GM21595-08 21750	PEDERSON, THORU GENE TRANSCRIPTION IN EUKARYOTES	WORCESTER FDN FOR EXPER BIOLOGY	SHREWSBURY	MASSACHUSETTS	82	11-82	1	127,732	MBY		201,855
5	R01 GM21874-08 21750	PARDUE, MARY L GENE FUNCTION ANALYSIS BY POLYTENE CHROMOSOMES	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	CAMBRIDGE	MASSACHUSETTS	82	01-83	2	99,284	GEN		155,132
5	R01 GM21891-08 21750	DAVIS, RONALD W CELL REGULATION: BIOCHEMICALLY ISOLATED DNA SEGMENTS	STANFORD UNIVERSITY	STANFORD	CALIFORNIA	82	02-83	0	94,771	MBY		146,838
5	R01 GM21941-08 21750	ROBERTS, JEFFREY W GENE CONTROL IN INFECTION & LYSOGENY BY PHAGE LAMBDA	CORNELL UNIVERSITY ITHACA	ITHACA	NEW YORK	82	01-83	3	104,644	MG		145,815
2	R01 GM22127-07A1 21750	WEAVER, ROBERT F TRANSCRIPTION CONTROL IN NUCLEAR POLYHEDROSIS VIRUS	UNIVERSITY OF KANSAS LAWRENCE	LAWRENCE	KANSAS	82	06-83	2	27,138	BIO	1	33,935
2	R01 GM22131-08 21750	SOMERVILLE, RONALD L REGULATORY MECHANISMS IN TRYPTOPHAN BIOSYNTHESIS	PURDUE UNIVERSITY WEST LAFAYETTE	WEST LAFAYETTE	INDIANA	82	06-83	2	91,475	MBC		122,806
5	R01 GM22274-08 21750	MESELSON, MATTHEW S NUCLEAR AND MESSENGER RNA OF DROSOPHILA	HARVARD UNIVERSITY	CAMBRIDGE	MASSACHUSETTS	82	06-83	2	178,328	GEN		273,549
5	R01 GM22395-08 21750	BROWN, DONALD D THE DUAL 5S RNA GENE SYSTEM IN XENOPUS	CARNEGIE INSTITUTION OF WASHINGTON D C	BALTIMORE	MARYLAND	82	08-83	2	123,513	GEN		192,296
2	R01 GM22580-07 21750	PAULE, MARVIN R GENE SELECTION BY MULTIPLE EUKARYOTIC RNA POLYMERASES	COLORADO STATE UNIVERSITY	FORT COLLINS	COLORADO	82	03-83	2	82,893	PBC		103,400
5	R01 GM22619-07 21750	KRAKOW, JOSEPH S STUDIES ON THE CYCLIC AMP RECEPTOR PROTEIN OF E. COLI	HUNTER COLLEGE	NEW YORK	NEW YORK	82	03-83	2	51,646	MBC		83,615
2	R01 GM22623-07 21750	LU, PONZY SPECIFIC PROTEIN-DNA COMPLEXES: STRUCTURE AND DYNAMICS	UNIVERSITY OF PENNSYLVANIA	PHILADELPHIA	PENNSYLVANIA	82	02-83	4	88,371	BBCB		135,185

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	GENETICS OF GROWTH AND DIFFERENTIATION SECTION								
	CONTROL OF GENE EXPRESSION								
2	R01 GM22749-07 21750	DICKSON, ROBERT C EUCARYOTIC ENZYME INDUCTION: B-GALACTOSIDASE IN YEAST	UNIVERSITY OF KENTUCKY	LEXINGTON	82 KENTUCKY	03-83	4	92,496	BIO 126,070
2	R01 GM22766-07 AI 21750	BROWN, RONALD D GENERATION OF ANTIBODY DIVERSITY DURING DEVELOPMENT	UNIVERSITY OF CINCINNATI	CINCINNATI	82 OHIO	03-83	2	84,042	ALY 113,659
5	R01 GM22830-07 21750	PLATT, TERRY REGULATORY SEQUENCES IN TRP OPERON MRNA OF E COLI	YALE UNIVERSITY	NEW HAVEN	82 CONNECTICUT	02-83	1	111,973	MBC 176,917
2	R01 GM22877-07 21750	SUSSKIND, MIRIAM M INTERACTING REGULATORS OF GENE EXPRESSION	UNIVERSITY OF MASSACHUSETTS MEDICAL SCH	WORCESTER	82 MASSACHUSETTS	03-83	4	75,525	MG 124,823
5	R01 GM22897-06 21750	LINDELL, THOMAS J CHARACTERIZATION OF NUCLEAR ENZYMOLOGY IN SITU	UNIVERSITY OF ARIZONA	TUCSON	82 ARIZONA	03-83	0	37,922	MBY 54,228
5	R01 GM22951-07 21750	SUEOKA, NOBORU GENE EXPRESSION IN NERVOUS VS OTHER TISSUES	UNIVERSITY OF COLORADO AT BOULDER	BOULDER	82 COLORADO	06-83	0	93,972	CTY 125,053
5	R01 GM23182-07 21750	CALHOUN, DAVID H CONTROL OF GENE EXPRESSION BY AN ALLOSTERIC ENZYME	MOUNT SINAI SCHOOL OF MEDICINE	NEW YORK	82 NEW YORK	06-83	1	46,322	MBC 67,095
5	R01 GM23259-06 21750	NILES, EDWARD G SPECIFIC SYNTHESIS AND PROCESSING OF RRNA IN VITRO	STATE UNIVERSITY OF NEW YORK AT BUFFALO	BUFFALO	81 NEW YORK	07-83	0	42,140	PBC 62,578
3	R01 GM23259-06S1 21750	NILES, EDWARD G SPECIFIC SYNTHESIS AND PROCESSING OF RRNA IN VITRO	STATE UNIVERSITY OF NEW YORK AT BUFFALO	BUFFALO	82 NEW YORK	07-83	0	6,928	GEN 10,131
3	R01 GM23259-06S2 21750	NILES, EDWARD G SPECIFIC SYNTHESIS AND PROCESSING OF RRNA IN VITRO	STATE UNIVERSITY OF NEW YORK AT BUFFALO	BUFFALO	82 NEW YORK	07-83	0	17,320	GEN 25,328
2	R01 GM23367-06 21750	MARZLUF, GEORGE A REGULATION OF GENE EXPRESSION IN NEUROSPORA	OHIO STATE UNIVERSITY	COLUMBUS	82 OHIO	12-82	4	65,679	GEN 86,724
5	R01 GM23464-06 21750	SOGIN, MITCHELL L THE ROLE OF REPETITIVE DNA SEQUENCES IN GENE EXPRESSION	NATIONAL JEWISH HOSPITAL & RESEARCH CTR	DENVER	82 COLORADO	01-83	0	58,039	PC 83,537
5	R01 GM23605-05 21750	KRIDER, HALLIE M BRDU EFFECTS ON THE RIBOSOMAL DNA OF DROSOPHILA	UNIVERSITY OF CONNECTICUT STORRS	STORRS	82 CONNECTICUT	12-82	3	49,706	GEN 75,607
5	R01 GM23671-06 21750	PFAHL, MAGNUS GENETIC ANALYSIS OF LAC REPRESSOR AND OPERATOR	SALK INSTITUTE FOR BIOLOGICAL STUDIES	LA JOLLA	82 CALIFORNIA	12-82	2	57,234	MBC 92,099
2	R01 GM23967-04A1 21750	KINSEY, JOHN A GENETIC STUDIES OF GLUTAMATE DEHYDROGENASE MUTANTS	UNIVERSITY OF KANSAS COL HLTH SCI & HOSP	KANSAS CITY	82 KANSAS	08-83	2	65,800	GEN 79,561
5	R01 GM24009-05 21750	TORRIANI-GORINI, ANNAMARIA PHOSPHATE REGULATION OF E COLI: ALKALINE PHOSPHATASE	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	CAMBRIDGE	82 MASSACHUSETTS	03-83	3	72,563	MBC 109,711

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	GENETICS OF GROWTH AND DIFFERENTIATION SECTION							
	CONTROL OF GENE EXPRESSION							
5	R01 GM24118-05 21750	KEDES, LAURENCE H HISTONE GENE TRANSCRIPTION IN EMBRYONIC DEVELOPMENT	STANFORD UNIVERSITY	STANFORD	81 CALIFORNIA	06-83	43,016 0	CBY 62,373
5	R01 GM24279-06 21750	FIRTEL, RICHARD A GENE STRUCTURE AND TRANSCRIPTIONAL REGULATION	UNIVERSITY OF CALIFORNIA SAN DIEGO	LA JOLLA	82 CALIFORNIA	08-83	146,298 2	MBY 192,393
5	R01 GM24294-05 21750	JENDRISAK, JEROME J REGULATION OF EUKARYOTIC GENE TRANSCRIPTION	UNIVERSITY OF MINNESOTA OF MNPLS-ST PAUL	MINNEAPOLIS	81 MINNESOTA	12-82	44,322 0	BIO 60,278
5	R01 GM24442-05 21750	BANCROFT, F CARTER REGULATION OF GROWTH HORMONE MESSENGER RNA	SLOAN-KETTERING INSTITUTE FOR CANCER RES	NEW YORK	82 NEW YORK	12-82	99,363 3	MBY 144,757
5	R01 GM24455-06 21750	HALL, DWIGHT H ORGANIZATION AND EXPRESSION OF THE GENOME OF PHAGE T4	GEORGIA INSTITUTE OF TECHNOLOGY	ATLANTA	82 GEORGIA	02-83	54,745 0	MBC 83,480
5	R01 GM24751-06 21750	SQUIRES, CATHERINE L FUSION OF THE RIBOSOMAL RNA PROMOTOR TO OTHER OPERONS	COLUMBIA UNIVERSITY	NEW YORK	82 NEW YORK	03-83	59,477 1	MBC 99,034
5	R01 GM24771-05 21750	HASTIE, NICHOLAS D REPETITIVE DNA SEQUENCES IN THE MOUSE GENOME	ROSWELL PARK MEMORIAL INSTITUTE	BUFFALO	82 NEW YORK	12-82	63,389 1	CTY 90,362
5	R01 GM24956-05 21750	BARNES, WAYNE M HISTIDINE OPERON: GENETIC CONTROL AND DNA SEQUENCE	WASHINGTON UNIVERSITY	SAINT LOUIS	82 MISSOURI	12-82	74,185 3	MG 113,887
5	R01 GM25137-03 21750	MOWSHOWITZ, DEBORAH B CONTROL OF PERIODIC ENZYME SYNTHESIS IN EUKARYOTES	COLUMBIA UNIVERSITY	NEW YORK	81 NEW YORK	02-83	35,012 0	GEN 53,060
2	R01 GM25157-04 21750	VALENZUELA, PABLO D ROLE OF RNA POLYMERASE SUBUNITS IN GENE TRANSCRIPTION	UNIVERSITY OF CALIFORNIA SAN FRANCISCO	SAN FRANCISCO	82 CALIFORNIA	11-82	34,776 4	MBY 45,557
2	R01 GM25207-04 21750	GREER, HELEN A GENE REGULATION OF HISTIDINE BIOSYNTHESIS IN YEAST	HARVARD UNIVERSITY	CAMBRIDGE	82 MASSACHUSETTS	11-82	101,250 2	GEN 148,365
5	R01 GM25232-05 21750	LIS, JOHN T COORDINATE GENE REGULATION IN ANIMAL CELLS	CORNELL UNIVERSITY ITHACA	ITHACA	82 NEW YORK	03-83	73,703 3	GEN 103,840
5	R01 GM25286-05 21750	GLASER, GAD STRUCTURE AND CONTROL OF E. COLI ACTIVITY	HEBREW UNIVERSITY OF JERUSALEM	JERUSALEM	82 ISRAEL	07-83	50,881 1	MG 50,881
5	R01 GM25388-05 21750	SPRAGUE, KAREN U CONTROL OF TRNA GENE EXPRESSION IN BOMBYX MORI	UNIVERSITY OF OREGON	EUGENE	82 OREGON	07-83	81,338 3	GEN 114,342
2	R01 GM25417-04 AI 21750	SNUSTAD, D PETER GENETICS OF VIRUS-INDUCED SHUTOFF OF HOST METABOLISM	UNIVERSITY OF MINNESOTA OF MNPLS-ST PAUL	MINNEAPOLIS	82 MINNESOTA	03-83	63,381 2	MG 84,499
2	R01 GM25498-04 21750	REVZIN, ARNOLD REGULATORY PROTEIN-DNA INTERACTIONS--PHYSICAL STUDIES	MICHIGAN STATE UNIVERSITY	EAST LANSING	82 MICHIGAN	12-82	64,778 2	BBCA 89,484

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	GENETICS OF GROWTH AND DIFFERENTIATION SECTION CONTROL OF GENE EXPRESSION								
5	R01 GM25532-05 21750	WARNER, JONATHAN R RIBOSOMAL PROTEIN GENES OF SACCHAROMYCES CEREVISIAE	YESHIVA UNIVERSITY	NEW YORK	82 NEW YORK	07-83	3	146,257	GEN 248,324
2	R01 GM25605-04 21750	JACKSON, JULIUS H CONTROL OF RELATED DISPERSED GENES AND GENE PRODUCTS	MEHARRY MEDICAL COLLEGE	NASHVILLE	82 TENNESSEE	11-82	2	67,828	MG 78,514
5	R01 GM25617-05 21750	BOURGEOIS-COHN, SUZANNE MECHANISMS OF PROTEIN-NUCLEIC ACID INTERACTIONS	SALK INSTITUTE FOR BIOLOGICAL STUDIES	LA JOLLA	82 CALIFORNIA	08-83	3	96,933	MG 155,295
5	R01 GM25652-05 21750	MORSE, DANIEL E GENETIC REGULATION BY CYCLIC AMP IN TETRAHYMENA	UNIVERSITY OF CALIFORNIA SANTA BARBARA	SANTA BARBARA	82 CALIFORNIA	06-83	1	73,436	CP 101,976
2	R01 GM25680-04 21750	CARUTHERS, MARVIN H CHEMICAL AND ENZYMATIC STUDIES ON GENE CONTROL REGIONS	UNIVERSITY OF COLORADO AT BOULDER	BOULDER	82 COLORADO	11-82	4	71,495	BNP 97,411
5	R01 GM25692-03 21750	MC REYNOLDS, LARRY A DEVELOPMENT OF VECTOR FOR EUKARYOTIC GENE TRANSFER	UNIVERSITY OF ARIZONA	TUCSON	81 ARIZONA	09-82	0	57,074	GEN 79,208
2	R01 GM25821-04 21750	RINGOLD, GORDON M MOLECULAR BIOLOGY OF STEROID HORMONE ACTION	STANFORD UNIVERSITY	STANFORD	82 CALIFORNIA	11-82	4	121,223	MBY 178,946
2	R01 GM25829-04A1 21750	FINKELSTEIN, DAVID B COORDINATION OF PERIODIC GENE EXPRESSION IN YEAST	UNIVERSITY OF TEXAS HLTH SCI CTR DALLAS	DALLAS	82 TEXAS	08-83	2	59,850	MBY 79,986
2	R01 GM25846-03 21750	LUSTY, CAROL J GENE STRUCTURE OF CARBAMYL PHOSPHATE SYNTHETASE	PUBLIC HLTH RES INST OF THE CITY OF NY	NEW YORK	82 NEW YORK	03-83	2	84,850	MBY 112,641
5	R01 GM25854-03 21750	TORRIANI-GORINI, ANNAMARIA GENETICS OF ALKALINE PHOSPHATASE EXPRESSION IN E. COLI	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	CAMBRIDGE	81 MASSACHUSETTS	11-82	0	41,888	MBC 64,602
2	R01 GM26079-04 21750	YOUNG, ELTON T, II GENETIC REGULATION OF ALCOHOL METABOLISM IN YEAST	UNIVERSITY OF WASHINGTON	SEATTLE	82 WASHINGTON	11-82	4	115,776	GEN 152,990
2	R01 GM26100-04 21750	WHITELEY, HELEN R PHAGE-INFECTED B. SUBTILIS: PROMOTER STUDIES	UNIVERSITY OF WASHINGTON	SEATTLE	82 WASHINGTON	11-82	3	38,723	MBC 51,206
5	R01 GM26137-03 21750	GURNEY, THEODORE, JR DRY FRACTIONATION OF MAMMALIAN CELLS	UNIVERSITY OF UTAH	SALT LAKE CITY	81 UTAH	11-82	0	43,832	MBY 64,433
5	R01 GM26147-04 21750	CHRISTENSEN, JAMES R MECHANISM BY WHICH N GENE OF LAMBDA EXCLUDES PHAGE T1	UNIVERSITY OF ROCHESTER	ROCHESTER	82 NEW YORK	07-83	0	31,779	EVR 52,435
5	R01 GM26154-12 21750	STEITZ, JOAN A MOLECULAR MECHANISMS IN GENE EXPRESSION	YALE UNIVERSITY	NEW HAVEN	82 CONNECTICUT	04-83	1	110,295	MBC 174,266
2	R01 GM26444-04 21750	EVANS, RONALD M HORMONAL REGULATION OF GENE EXPRESSION IN MAMMALIAN CELL	SALK INSTITUTE FOR BIOLOGICAL STUDIES	LA JOLLA	82 CALIFORNIA	03-83	2	89,732	MBY 145,366

TABLE-4 RESEARCH GRANTS ACTIVE AS OF 09-30-82 BY PROGRAM AREA AND GRANT NUMBER

T	GRANT NUMBER / PROG-AREA	INVESTIGATOR / PROJECT TITLE	GRANTEE INSTITUTION	CITY	FY / STATE	END-DATE	FUT-YRS AVAILABLE	DOLLARS DIRECT	IRG SUB DOLLARS TOTAL
		GENETICS OF GROWTH AND DIFFERENTIATION SECTION							
		CONTROL OF GENE EXPRESSION							
2	R01 GM26515-04 21750	HIRSH, DAVID I STRUCTURE AND EXPRESSION OF EUCARYOTIC GENES	UNIVERSITY OF COLORADO AT BOULDER	BOULDER	82 COLORADO	03-83	4	103,390	GEN 138,798
5	R01 GM26527-03 21750	BORISY, GARY ORGANIZATION AND REPLICATION OF YEAST RIBOSOMAL DNA	UNIVERSITY OF WISCONSIN MADISON	MADISON	81 WISCONSIN	09-82	0	65,355	GEN 92,751
5	R01 GM26624-04 21750	REEDER, RONALD H CONTROL OF RIBOSOMAL GENE TRANSCRIPTION	FRED HUTCHINSON CANCER RESEARCH CENTER	SEATTLE	82 WASHINGTON	07-83	1	96,516	MBY 106,158
5	R01 GM26756-03 21750	SCHMIDT, FRANCIS J GENE STRUCTURE OF AN RNA PROCESSING ENZYME	UNIVERSITY OF MISSOURI COLUMBIA	COLUMBIA	82 MISSOURI	03-83	0	34,995	MBC 44,794
2	R01 GM26765-04 21750	NEVINS, JOSEPH R CELLULAR & ADENOVIVRUS GENE EXPRESSION	ROCKEFELLER UNIVERSITY	NEW YORK	82 NEW YORK	06-83	2	71,343	MBY 110,869
5	R01 GM26770-04 21750	CHAPMAN, VERNE M NEW GLUCURONIDASE REGULATORY VARIANTS IN MICE	ROSWELL PARK MEMORIAL INSTITUTE	BUFFALO	82 NEW YORK	06-83	1	99,669	GEN 148,351
5	R01 GM26808-03 21750	KLASS, MICHAEL R CELL-SPECIFIC GENE EXPRESSION	UNIVERSITY OF HOUSTON AT HOUSTON	HOUSTON	81 TEXAS	08-83	0	50,518	GEN 65,673
2	R01 GM26863-04 AI 21750	FIGURSKI, DAVID H REPRODUCTION OF EXTRACHROMOSOMAL ELEMENTS IN BACTERIA	COLUMBIA UNIVERSITY	NEW YORK	82 NEW YORK	08-83	2	65,434	MG 105,465
2	R01 GM26878-04 AI 21750	STAUFFER, GEORGE V REGULATION OF ONE CARBON METABOLISM	UNIVERSITY OF IOWA	IOWA CITY	82 IOWA	06-83	2	70,348	MG 92,051
2	R01 GM26939-04 21750	MARCU, KENNETH B REGULATION OF EXPRESSION OF EUKARYOTIC GENE FAMILIES	STATE UNIVERSITY NEW YORK STONY BROOK	STONY BROOK	82 NEW YORK	06-83	2	61,916	MGM 90,747
5	R01 GM27068-03 21750	ROTH, JOHN R GENETIC ANALYSIS OF BACTERIAL CHROMOSOME STRUCTURE	UNIVERSITY OF UTAH	SALT LAKE CITY	82 UTAH	11-82	0	36,554	MBC 52,103
5	R01 GM27113-02 21750	WOLF, RICHARD E, JR GROWTH RATE-DEPENDENT CONTROL OF GENE EXPRESSION	UNIVERSITY OF MARYLAND BALT CO CAMPUS	CATONSVILLE	82 MARYLAND	03-83	1	59,699	MG 88,802
5	R01 GM27117-03 21750	LUTTER, LEONARD C THE STRUCTURE OF TRANSCRIBING CHROMATIN	UNIVERSITY OF MICHIGAN AT ANN ARBOR	ANN ARBOR	82 MICHIGAN	12-82	0	38,584	MBY 60,963
5	R01 GM27241-03 21750	COHEN, STANLEY N GENE EXPRESSION IN HETEROSPECIFIC ENVIRONMENTS	STANFORD UNIVERSITY	STANFORD	82 CALIFORNIA	11-82	2	102,281	SSS 161,604
5	R01 GM27307-03 21750	ARTZ, STANLEY W GENE REGULATORY MECHANISMS IN AMINO ACID BIOSYNTHESIS	UNIVERSITY OF CALIFORNIA DAVIS	DAVIS	82 CALIFORNIA	11-82	0	70,457	MBC 92,299
5	R01 GM27318-03 21750	HIRSH, JAY REGULATION OF THE DOPA DECARBOXYLASE GENE	HARVARD UNIVERSITY	BOSTON	82 MASSACHUSETTS	12-82	0	46,624	MBY 89,374

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GENETICS OF GROWTH AND DIFFERENTIATION SECTION
CONTROL OF GENE EXPRESSION

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5 R01 GM27322-04 21750	WEINBERG, ERIC S HISTONE GENES AND THEIR TRANSCRIPTION	UNIVERSITY OF PENNSYLVANIA	PHILADELPHIA	82 PENNSYLVANIA	06-83	3 96,268	MBY 156,567
5 R01 GM27593-02 21750	BEAUDET, ARTHUR L REGULATION OF ARGININOSUCCINATE SYNTHETASE	BAYLOR COLLEGE OF MEDICINE	HOUSTON	82 TEXAS	03-83	1 77,561	MGN 105,123
5 R01 GM27664-03 21750	MORGAN, EDWARD A NEW APPROACHES TO ASPECTS OF TRNA AND RRNA IN E COLI	STATE UNIVERSITY OF NEW YORK AT BUFFALO	BUFFALO	82 NEW YORK	05-83	0 41,058	MBC 59,118
5 R01 GM27754-03 21750	WAHL, GEOFFREY M DRUG RESISTANCE AND GENE AMPLIFICATION IN EUKARYOTES	SALK INSTITUTE FOR BIOLOGICAL STUDIES	LA JOLLA	82 CALIFORNIA	03-83	0 75,412	MGN 122,167
5 R01 GM27789-03 21750	MARZLUFF, WILLIAM F, JR TRANSCRIPTION OF LMW NUCLEAR RNA GENES IN DEVELOPMENT	FLORIDA STATE UNIVERSITY	TALLAHASSEE	82 FLORIDA	06-83	0 64,320	MBY 92,497
5 R01 GM27790-03 21750	MATHEWS, MICHAEL B INDUCTION AND REPRESSION BY AMINO ACID ANALOGUES	COLD SPRING HARBOR LABORATORY	COLD SPRING HARB	82 NEW YORK	03-83	0 51,133	MBY 91,068
5 R01 GM27861-14 21750	LANDY, ARTHUR CONTROL OF SYNTHESIS AND FUNCTION OF NUCLEIC ACID	BROWN UNIVERSITY	PROVIDENCE	82 RHODE ISLAND	05-83	2 81,602	MBC 126,690
5 R01 GM27870-03 21750	CRAIG, ELIZABETH A CHARACTERIZATION OF TRANSCRIPTIONALLY REGULATED GENES	UNIVERSITY OF WISCONSIN MADISON	MADISON	82 WISCONSIN	03-83	0 56,164	GEN 79,025
5 R01 GM27889-03 21750	OLSON, MAYNARD V YEAST TRNA GENES	WASHINGTON UNIVERSITY	SAINT LOUIS	82 MISSOURI	03-83	0 47,229	GEN 73,205
5 R01 GM27896-03 21750	LIEBKE, E HOPE REGULATION OF RRN OPERON EXPRESSION: MUTANT ANALYSIS	YALE UNIVERSITY	NEW HAVEN	82 CONNECTICUT	07-83	0 34,654	MBC 57,770
5 R01 GM27925-04 21750	HOPPER, JAMES E MOLECULAR BASIS OF INTERCHROMOSOMAL GENE REGULATION	PENNSYLVANIA STATE UNIV HERSHEY MED CTR	HERSHEY	82 PENNSYLVANIA	08-83	1 90,475	MBY 119,639
5 R01 GM27973-02 21750	IVARIE, ROBERT D REGULATION OF R PLASMID GENES IN ESCHERICHIA COLI	UNIVERSITY OF GEORGIA	ATHENS	81 GEORGIA	05-83	3 80,159	MG 109,248
5 R01 GM28017-03 21750	EGOROV, IGOR K MUTATIONS OF CMAD LOCI IN MOUSE CHROMOSOME 17	JACKSON LABORATORY	BAR HARBOR	82 MAINE	08-83	0 156,215	MGN 226,236
5 R01 GM28039-03 21750	CECH, THOMAS R ENZYMATIC SPLICING OF A RIBOSOMAL RNA PRECURSOR	UNIVERSITY OF COLORADO AT BOULDER	BOULDER	82 COLORADO	07-83	0 48,572	MBY 67,952
5 R01 GM28057-03 21750	WU, FELICIA Y ROLE OF METAL IN GENE EXPRESSION	STATE UNIVERSITY NEW YORK STONY BROOK	STONY BROOK	82 NEW YORK	08-83	0 52,052	MBC 77,542
5 R01 GM28069-03 21750	WU, CHENG-WEN MECHANISM AND REGULATION OF GENE TRANSCRIPTION	STATE UNIVERSITY NEW YORK STONY BROOK	STONY BROOK	82 NEW YORK	12-82	2 108,644	BBCA 161,482

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	GENETICS OF GROWTH AND DIFFERENTIATION SECTION CONTROL OF GENE EXPRESSION									
5	R01 GM28138-03 21750	TAKEDA, YOSHINORI DEVELOPMENTAL SWITCH IN PHAGE LAMBDA	UNIVERSITY OF MARYLAND BALT CO CAMPUS	CATONSVILLE	MARYLAND	82	06-83	0	55,262	MG 80,633
5	R01 GM28214-03 21750	JOHNSON, JAMES R REGULATION OF METHIONINE BIOSYNTHESIS IN E. COLI K12	TEXAS AGRI AND MECH UNIV COLLEGE STATION	COLLEGE STATION	TEXAS	82	06-83	0	42,475	MG 54,213
5	R01 GM28216-08 21750	MICHELS, CORINNE A YEAST--A MODEL FOR STUDYING REGULATION IN CANCER CELLS	QUEENS COLLEGE	NEW YORK	NEW YORK	82	06-83	0	84,703	GEN 138,744
5	R01 GM28274-03 21750	PEDERSON, THORU GENE TRANSCRIPTION IN DROSOPHILA	WORCESTER FDN FOR EXPER BIOLOGY	SHREWSBURY	MASSACHUSETTS	82	06-83	0	46,700	GEN 77,067
5	R01 GM28298-03 21750	STALLCUP, MICHAEL R STEROID HORMONE ACTION: MOLECULAR AND GENETIC STUDIES	UNIVERSITY OF SOUTH CAROLINA AT COLUMBIA	COLUMBIA	SOUTH CAROLINA	82	06-83	0	51,535	MBY 74,777
5	R01 GM28301-03 21750	WOOLFORD, JOHN L, JR YEAST RIBOSOMAL PROTEIN GENES: STRUCTURE AND FUNCTION	CARNEGIE-MELLON UNIVERSITY	PITTSBURGH	PENNSYLVANIA	82	07-83	0	61,455	GEN 94,705
5	R01 GM28303-03 21750	SCHLESINGER, MILTON J FUNCTION AND REGULATION OF "HEAT-SHOCK" PROTEINS	WASHINGTON UNIVERSITY	SAINT LOUIS	MISSOURI	82	06-83	0	62,605	MBY 97,038
5	R01 GM28331-03 21750	GROSS, SAMSON R REGULATORY MECHANISMS OF ENZYME SYNTHESIS IN NEUROSPORA	DUKE UNIVERSITY	DURHAM	NORTH CAROLINA	82	07-83	2	87,062	MBY 129,081
5	R01 GM28362-03 21750	ITO, JUNETSU STUDIES OF SPORULATION IN BACILLUS SUBTILIS	UNIVERSITY OF ARIZONA	TUCSON	ARIZONA	82	03-83	0	63,225	MBC 87,101
5	R01 GM28370-03 21750	WULFF, DANIEL L CONTROL OF TRANSCRIPTION AT THE LAMBDA PRE PROMOTER	STATE UNIVERSITY OF NEW YORK AT ALBANY	ALBANY	NEW YORK	82	06-83	3	74,489	MG 106,830
5	R01 GM28407-11 21750	SMITH, ISSAR GENETICS OF THE B SUBTILIS TRANSLATIONAL APPARATUS	PUBLIC HLTH RES INST OF THE CITY OF NY	NEW YORK	NEW YORK	82	06-83	0	63,692	MBC 87,643
5	R01 GM28520-02 21750	RUTTER, WILLIAM J SPECIFIC GENE EXPRESSION IN EUCARYOTIC ORGANISMS	UNIVERSITY OF CALIFORNIA SAN FRANCISCO	SAN FRANCISCO	CALIFORNIA	82	11-82	3	128,221	MBY 166,650
5	R01 GM28572-02 21750	MARMUR, JULIUS REGULATION OF GENE EXPRESSION IN YEAST	YESHIVA UNIVERSITY	NEW YORK	NEW YORK	82	02-83	1	133,881	SSS 246,668
5	R01 GM28575-02 21750	BURGESS, RICHARD R RNA POLYMERASE SIGMA SUBUNIT: STRUCTURE AND FUNCTION	UNIVERSITY OF WISCONSIN MADISON	MADISON	WISCONSIN	82	11-82	3	63,374	MG 87,264
5	R01 GM28628-02 21750	KALLEN, ROLAND G NUCLEIC ACID SEQUENCES IN MULTIGENE FAMILIES	UNIVERSITY OF PENNSYLVANIA	PHILADELPHIA	PENNSYLVANIA	82	12-82	1	53,406	BIO 86,950
5	R01 GM28680-02 21750	STRAUSBAUGH, LINDA D GENETICS OF HISTONE DNA IN DROSOPHILA	UNIVERSITY OF CONNECTICUT STORRS	STORRS	CONNECTICUT	82	01-83	1	50,486	GEN 77,612

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	GENETICS OF GROWTH AND DIFFERENTIATION SECTION CONTROL OF GENE EXPRESSION									
	5 R01 GM28706-02 21750	PARKINSON, JOHN S OVERLAPPING GENES IN ESCHERICHIA COLI	UNIVERSITY OF UTAH	SALT LAKE CITY	82 UTAH	11-82	1	45,126	GEN	65,433
	5 R01 GM28717-02 21750	GARDNER, JEFFREY F REGULATORY MUTATIONS IN THE THREONINE OPERON	UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN	URBANA	82 ILLINOIS	11-82	1	58,160	MG	81,548
	5 R01 GM28749-02 21750	BOYER, HERBERT W DISSECTION OF PROCARYOTIC PROMOTER FUNCTIONS	UNIVERSITY OF CALIFORNIA SAN FRANCISCO	SAN FRANCISCO	82 CALIFORNIA	01-83	3	86,877	MG	113,809
	5 R01 GM28760-03 1 21750	KUSHNER, SIDNEY R FUNCTIONAL EXPRESSION OF EUKARYOTIC DNA IN E COLI	UNIVERSITY OF GEORGIA	ATHENS	82 GEORGIA	03-83	0	64,336	MBC	87,083
	5 R01 GM28777-03 21750	GILES, NORMAN H GENETIC REGULATORY MECHANISMS IN NEUROSPORA	UNIVERSITY OF GEORGIA	ATHENS	82 GEORGIA	06-83	3	151,714	GEN	208,187
	2 R01 GM28791-03 21750	SOFER, WILLIAM H A SYSTEM FOR ANALYSIS OF GENE CONTROL IN DROSOPHILA	RUTGERS THE STATE UNIV NEW BRUNSWICK	NEW BRUNSWICK	82 NEW JERSEY	06-83	4	68,486	GEN	107,164
	5 R01 GM28837-03 21750	DODGSON, JERRY B CONTROL OF GENE EXPRESSION IN AVIAN ERYTHROPOIESIS	MICHIGAN STATE UNIVERSITY	EAST LANSING	82 MICHIGAN	07-83	0	57,636	GEN	81,267
	5 R01 GM28838-03 21750	PACKMAN, SEYMOUR COPPER METABOLISM IN THE MOTTLED MOUSE	UNIVERSITY OF CALIFORNIA SAN FRANCISCO	SAN FRANCISCO	82 CALIFORNIA	07-83	0	79,487	MGN	101,505
	5 R01 GM28905-02 21750	BAKKEN, AIMEE H DISSECTING GENE FUNCTION BY ELECTRON MICROSCOPY	UNIVERSITY OF WASHINGTON	SEATTLE	82 WASHINGTON	02-83	1	60,021	GEN	73,734
	5 R01 GM28920-02 21750	SMITH, MALCOLM M REGULATION OF HISTONE GENE EXPRESSION IN YEAST	UNIVERSITY OF VIRGINIA CHARLOTTESVILLE	CHARLOTTESVILLE	82 VIRGINIA	03-83	1	42,296	GEN	60,278
	5 R01 GM28946-02 21750	DAS, ASIS K GENE REGULATION BY TRANSCRIPTION ANTITERMINATION	UNIVERSITY OF CONNECTICUT HEALTH CENTER	FARMINGTON	82 CONNECTICUT	03-83	1	57,080	MG	81,866
	5 R01 GM28983-02 21750	MANLEY, JAMES L CONTROL OF MRNA SYNTHESIS IN MAMMALIAN CELLS	COLUMBIA UNIVERSITY	NEW YORK	82 NEW YORK	03-83	1	58,317	MBY	97,198
	5 R01 GM29049-02 21750	SUSSKIND, MIRIAM M FINE-STRUCTURE GENETIC ANALYSIS OF A STRONG PROMOTER	UNIVERSITY OF MASSACHUSETTS MEDICAL SCH	WORCESTER	82 MASSACHUSETTS	03-83	2	57,508	MG	96,364
	5 R01 GM29085-02 21750	FIGURSKI, DAVID H GENE REGULATION IN BROAD HOST RANGE PLASMIDS	COLUMBIA UNIVERSITY	NEW YORK	82 NEW YORK	03-83	1	61,768	MG	103,523
	5 R01 GM29100-02 21750	RODRIGUEZ, RAYMOND L DNA SEQUENCES CONTROLLING GENE EXPRESSION	UNIVERSITY OF CALIFORNIA DAVIS	DAVIS	82 CALIFORNIA	03-83	1	75,564	MG	97,295
	5 R01 GM29109-02 21750	PTASHNE, MARK S STRUCTURAL STUDY OF REPRESSOR-OPERATOR INTERACTIONS	HARVARD UNIVERSITY	CAMBRIDGE	82 MASSACHUSETTS	03-83	1	72,913	BBCA	109,586

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		GENETICS OF GROWTH AND DIFFERENTIATION SECTION								
		CONTROL OF GENE EXPRESSION								
5	R01 GM29152-02 21750	WILD, JAMES R ORGANIZATION AND REGULATION OF THE ATCASE CISTRONS	TEXAS AGRI AND MECH UNIV COLLEGE STATION	COLLEGE STATION	TEXAS	82	05-83	1	36,919	MG 47,626
5	R01 GM29224-03 21750	HECHT, NORMAN B GENE EXPRESSION DURING SPERMATOGENESIS	TUFTS UNIVERSITY	MEDFORD	MASSACHUSETTS	82	08-83	0	46,985	REB 76,586
5	R01 GM29245-03 21750	DOWNEY, RONALD J BIOSYNTHESIS OF NITRATE REDUCTASE IN FUNGI	OHIO UNIVERSITY ATHENS	ATHENS	OHIO	82	08-83	0	29,842	MBC 39,541
5	P01 GM29301-02 21750	KAFATOS, FOTIS C MOLECULAR AND DEVELOPMENTAL GENETICS OF DROSOPHILA	HARVARD UNIVERSITY	CAMBRIDGE	MASSACHUSETTS	82	07-83	3	377,045	SSS 577,139
5	R01 GM29356-02 21750	JOHNSON, LEE F THYMIDYLATE SYNTHETASE GENE EXPRESSION	OHIO STATE UNIVERSITY	COLUMBUS	OHIO	82	08-83	1	36,318	MBY 49,016
5	R01 GM29361-02 21750	CALAME, KATHRYN L TRANSCRIPTION OF IMMUNOGLOBULIN HEAVY CHAIN GENES	UNIVERSITY OF CALIFORNIA LOS ANGELES	LOS ANGELES	CALIFORNIA	82	11-82	1	67,880	MGN 86,675
1	R01 GM29384-01 21750	NIERMAN, WILLIAM C TRANSCRIPTION OF DROSOPHILA HEAT SHOCK AND ACTIN GENES	AMERICAN TYPE CULTURE COLLECTION	ROCKVILLE	MARYLAND	82	03-83	2	40,959	GEN 55,707
5	R01 GM29430-02 21750	PARKER, CARL S SPECIFIC IN VITRO TRANSCRIPTION OF STRUCTURAL GENES	CALIFORNIA INSTITUTE OF TECHNOLOGY	PASADENA	CALIFORNIA	82	08-83	1	65,236	GEN 95,109
5	R01 GM29456-02 21750	GUNSALUS, ROBERT P INTERACTION OF TRP REPRESSOR WITH TRP OPERATOR DNA	UNIVERSITY OF CALIFORNIA LOS ANGELES	LOS ANGELES	CALIFORNIA	82	08-83	1	55,612	MG 77,134
5	R01 GM29466-02 21750	TURNBOUGH, CHARLES L, JR REGULATION OF PYRIMIDINE GENE EXPRESSION IN BACTERIA	UNIVERSITY OF ALABAMA IN BIRMINGHAM	BIRMINGHAM	ALABAMA	82	07-83	1	50,638	MG 68,265
5	R01 GM29539-02 21750	BERGET, SUSAN M TRANSCRIPTIONAL CONTROL BY SMALL RIBONUCLEOPROTEINS	RICE UNIVERSITY	HOUSTON	TEXAS	82	07-83	1	62,909	PC 86,814
1	R01 GM29627-01 21750	WANNER, BARRY L PHOSPHATE CONTROLLED GENE EXPRESSION IN E COLI	EMORY UNIVERSITY	ATLANTA	GEORGIA	82	12-82	2	75,715	MG 103,573
5	R01 GM29697-02 21750	LAI, EUGENE C EUCARYOTIC GENE MUTAGENESIS AND EXPRESSION	BAYLOR COLLEGE OF MEDICINE	HOUSTON	TEXAS	82	06-83	1	82,020	MGN 108,847
5	R01 GM29721-02 21750	LACKS, SANFORD A DNA METHYLATION AND THE REGULATION OF GENE FUNCTION	ASSOCIATED UNIV-BROOKHAVEN NATL LAB	UPTON	NEW YORK	82	06-83	3	61,285	MG 98,056
5	R01 GM29764-02 21750	LUTKENHAUS, JOSEPH F REGULATION OF EXPRESSION OF CELL DIVISION GENES	UNIVERSITY OF KANSAS COL HLTH SCI & HOSP	KANSAS CITY	KANSAS	82	06-83	1	62,228	MG 83,012
5	R01 GM29831-02 21750	OGATA, RONALD T STRUCTURE AND EXPRESSION OF COMPLEMENT GENES	SCRIPPS CLINIC AND RESEARCH FOUNDATION	LA JOLLA	CALIFORNIA	82	03-83	1	70,662	ALY 116,522

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GENETICS OF GROWTH AND DIFFERENTIATION SECTION CONTROL OF GENE EXPRESSION							
2 R01 GM29832-06A2 AG 21750	MARZLUFF, WILLIAM F, JR CONTROL OF HISTONE MRNA SYNTHESIS	FLORIDA STATE UNIVERSITY	TALLAHASSEE	82 FLORIDA	06-83	2 82,062	CTY 114,130
5 R01 GM29851-02 21750	OESCHGER, MAX P TS NONSENSE SUPPRESSORS OF E COLI K-12	JOHNS HOPKINS UNIVERSITY	BALTIMORE	82 MARYLAND	06-83	0 62,580	MBC 93,870
3 R01 GM29851-02S1 21750	OESCHGER, MAX P TS NONSENSE SUPPRESSORS OF E. COLI K-12	JOHNS HOPKINS UNIVERSITY	BALTIMORE	82 MARYLAND	06-83	0 22,751	MG 34,127
1 R01 GM30027-01 21750	SPRAGUE, GEORGE F, JR GENETIC REGULATION OF YEAST CELL TYPE	UNIVERSITY OF OREGON	EUGENE	82 OREGON	01-83	2 76,092	GEN 99,507
1 R01 GM30054-01 21750	SAVAGEAU, MICHAEL A ANALYSIS OF MOLECULAR NETWORKS AND CONTROL SYSTEMS	UNIVERSITY OF MICHIGAN AT ANN ARBOR	ANN ARBOR	82 MICHIGAN	03-83	3 46,468	SSS 71,679
1 R01 GM30134-01 21750	ROSSI, JOHN J SYNTHETIC DNA IN STUDIES OF EUKARYOTIC GENE EXPRESSION	CITY OF HOPE NATIONAL MEDICAL CENTER	DUARTE	82 CALIFORNIA	01-83	2 70,000	GEN 109,613
1 R01 GM30181-01 21750	STORTI, ROBERT V REGULATION OF EXPRESSION OF CLONED MUSCLE GENES	UNIVERSITY OF ILLINOIS MEDICAL CENTER	CHICAGO	82 ILLINOIS	01-83	2 30,705	GEN 48,207
1 R01 GM30186-01 21750	STRUHL, KEVIN EXPRESSION AND REGULATION OF THE YEAST HIS3 GENE	HARVARD UNIVERSITY	BOSTON	82 MASSACHUSETTS	02-83	2 85,000	GEN 118,184
1 R01 GM30220-01 21750	DAHLBERG, JAMES E STRUCTURE, ORGANIZATION AND EXPRESSION OF SNRNA GENES	UNIVERSITY OF WISCONSIN MADISON	MADISON	82 WISCONSIN	03-83	2 85,353	GEN 117,970
1 R01 GM30249-01 21750	DUFFY, JOHN J REGULATION OF RNA POLYMERASE II SYNTHESIS	UNIVERSITY OF ARIZONA	TUCSON	82 ARIZONA	01-83	2 63,410	MBY 87,705
1 R01 GM30270-01A1 21750	SCHOENBERG, DANIEL R ESTROGEN ACTION IN XENOPUS LIVER	U.S. UNIFORMED SERVICES UNIV OF HLTH SCI	BETHESDA	82 MARYLAND	06-83	2 42,038	BCE 42,038
2 R01 GM30307-02 21750	HOLLAND, MICHAEL J CONTROL OF TRANSCRIPTION OF ISOLATED EUCARYOTIC GENES	UNIVERSITY OF CALIFORNIA DAVIS	DAVIS	82 CALIFORNIA	04-83	4 61,746	GEN 80,887
5 R01 GM30317-03 21750	KEY, JOE L RNA METABOLISM IN DEVELOPMENT AND HORMONAL REGULATION	UNIVERSITY OF GEORGIA	ATHENS	82 GEORGIA	07-83	3 92,093	PC 126,138
1 R01 GM30405-01 2 21750	BRANDRISS, MARJORIE C GENETIC REGULATION OF PROLINE UTILIZATION	UNIVERSITY OF MEDICINE & DENTISTRY OF NJ	NEWARK	82 NEW JERSEY	05-83	2 66,387	GEN 105,245
1 R01 GM30454-01 21750	GUARENTE, LEONARD P GENETICS OF TRANSCRIPTION & TRANSLATION IN YEAST	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	CAMBRIDGE	82 MASSACHUSETTS	04-83	2 65,253	GEN 90,804
1 R01 GM30491-01 21750	WILCOX, GARY L BIOCHEMICAL GENETICS OF BACTERIAL PLANT PATHOGENS	UNIVERSITY OF CALIFORNIA LOS ANGELES	LOS ANGELES	82 CALIFORNIA	04-83	2 65,754	MG 83,098

T	GRANT NUMBER / PROG-AREA	INVESTIGATOR / PROJECT TITLE	GRANTEE INSTITUTION	CITY	STATE	FY	END-DATE	FUT-YRS AVAILABLE DIRECT	IRG SUB DOLLARS TOTAL
		GENETICS OF GROWTH AND DIFFERENTIATION SECTION CONTROL OF GENE EXPRESSION							
1	R13 GM30536-01 GM 21750	WATSON, JAMES D CONFERENCE ON HEAT SHOCK INDUCTION OF PROTEINS	COLD SPRING HARBOR LABORATORY	COLD SPRING HARB	NEW YORK	82	03-83	0 5,000	MBY 5,000
5	R01 GM30547-02 21750	CALVET, JAMES P PATTERNS OF GENE TRANSCRIPTION IN HE LA CELLS	UNIVERSITY OF KANSAS COL HLTH SCI & HOSP	KANSAS CITY	KANSAS	82	07-83	0 52,413	MBY 69,585
1	R01 GM30636-01 AI 21750	JONES, NICHOLAS C THE MECHANISM AND REGULATION OF RNA SPLICING	PURDUE UNIVERSITY WEST LAFAYETTE	WEST LAFAYETTE	INDIANA	82	04-83	2 57,000	EVR 76,600
1	R01 GM30637-01 21750	KORNBERG, THOMAS B MOLECULAR MECHANISMS IN DEVELOPMENT	UNIVERSITY OF CALIFORNIA SAN FRANCISCO	SAN FRANCISCO	CALIFORNIA	82	02-83	2 85,909	MBY 112,386
1	R01 GM30693-01 21750	FIRTEL, RICHARD A ANALYSIS OF DEVELOPMENTALLY REGULATED GENES	UNIVERSITY OF CALIFORNIA SAN DIEGO	LA JOLLA	CALIFORNIA	82	03-83	4 81,396	GEN 102,948
1	R01 GM30707-01 21750	HALVORSON, HARLYN O ORGANIZATION & REGULATION OF INVERTASE STRUCTURAL GENE	BRANDEIS UNIVERSITY	WALTHAM	MASSACHUSETTS	82	04-83	2 68,676	BIO 110,635
1	R01 GM30709-01 AI 21750	SADLER, JOHN R DETERMINANTS OF SPECIFICITY IN THE LACTOSE REPRESSOR	UNIVERSITY OF COLORADO HLTH SCIENCES CTR	DENVER	COLORADO	82	04-83	2 71,091	MG 88,298
5	R01 GM30760-02 21750	ZIFF, EDWARD B ADENOVIRUS-2 MESSENGER RNA SYNTHESIS STRUCTURAL STUDIES	NEW YORK UNIVERSITY	NEW YORK	NEW YORK	82	08-83	3 83,865	VR 123,893
1	R01 GM30786-01 21750	HEARST, JOHN E DIFFERENTIATION & GENETICS OF A PHOTOSYNTHETIC MEMBRANE	UNIVERSITY OF CALIFORNIA BERKELEY	BERKELEY	CALIFORNIA	82	07-83	2 70,000	MBC 99,330
1	R01 GM30896-01 21750	WILCOX, GARY L MOLECULAR BASIS OF CONTROL IN THE L-ARABINOSE OPERON	UNIVERSITY OF CALIFORNIA LOS ANGELES	LOS ANGELES	CALIFORNIA	82	07-83	4 80,000	MG 109,838
1	R01 GM31060-01 21750	NISHIKURA, KAZUKO ROLE OF RNA PROCESSING IN CELL DIFFERENTIATION	WISTAR INSTITUTE OF ANATOMY AND BIOLOGY	PHILADELPHIA	PENNSYLVANIA	82	07-83	2 80,000	CTY 124,400
1	R01 GM31105-01 21750	RINE, JASPER D ANALYSIS OF THE GENES CONTROLLING A POSITION EFFECT	UNIVERSITY OF CALIFORNIA BERKELEY	BERKELEY	CALIFORNIA	82	06-83	2 82,935	GEN 104,849
1	R01 GM31107-01 21750	CRAIG, ELIZABETH A REGULATION AND FUNCTION OF THE YEAST HEAT SHOCK RESPONSE	UNIVERSITY OF WISCONSIN MADISON	MADISON	WISCONSIN	82	06-83	2 71,711	GEN 94,648
1	R01 GM31125-01 21750	VOELLMY, RICHARD W MECHANISM OF REGULATION OF HEAT-SHOCK GENE EXPRESSION	UNIVERSITY OF MIAMI	MIAMI	FLORIDA	82	06-83	2 90,000	GEN 131,897
1	R01 GM31137-01 21750	CASHMORE, ANTHONY R SEQUENCES ENCODING THE SMALL SUBUNIT OF RUBP CARBOXYLASE	ROCKEFELLER UNIVERSITY	NEW YORK	NEW YORK	82	07-83	2 62,529	MBY 94,451
1 3	R01 GM31138-01 21750	LEE, AMY SHIU HISTONE GENE EXPRESSION IN THE MAMMALIAN CELL CYCLE	UNIVERSITY OF SOUTHERN CALIFORNIA	LOS ANGELES	CALIFORNIA	82	08-83	2 65,837	MBY 93,576

T	GRANT NUMBER / PROG-AREA	INVESTIGATOR / PROJECT TITLE	GRANTEE INSTITUTION	CITY	STATE	FY	END-DATE	FUT-YRS AVAILABLE	IRG	SUB	DOLLARS DIRECT	DOLLARS TOTAL
GENETICS OF GROWTH AND DIFFERENTIATION SECTION												
CONTROL OF GENE EXPRESSION												
1	R01 GM31159-01	SILFLOW, CAROLYN D	UNIVERSITY OF MINNESOTA OF MNPLS-ST PAUL			82	06-83	2	MBY			
	21750	CHARACTERIZATION AND EXPRESSION OF TUBULIN GENES		MINNEAPOLIS	MINNESOTA						61,756	79,601
1	R01 GM31178-01	HARALSON, MICHAEL A	VANDERBILT UNIVERSITY			82	07-83	3	PBC			
	21750	THE BIOSYNTHESIS AND REGULATION OF TYPE V PROCOLLAGEN		NASHVILLE	TENNESSEE						63,421	93,987
1	R01 GM31218-01	SKLAR, JEFFREY L	STANFORD UNIVERSITY			82	06-83	2	MBY			
	21750	TRANSCRIPTION OF HUMAN GLOBIN GENES IN DNA VECTORS		STANFORD	CALIFORNIA						63,050	89,582
2	R01 GM31261-02	WALLACE, R BRUCE	CITY OF HOPE RESEARCH INSTITUTE			82	03-83	4	MGN			
	21750	MAJOR HISTOCOMPATIBILITY COMPLEX GENE SEQUENCES		DUARTE	CALIFORNIA						114,928	179,916
1	R01 GM31276-01	WOLD, WILLIAM S	ST. LOUIS UNIVERSITY			82	07-83	2	VR			
	CA 21750	ADENOVIRUS EXPRESSION VECTOR		SAINT LOUIS	MISSOURI						44,018	63,437
7	R01 GM31307-01	ABELSON, JOHN N	AGOURON INSTITUTE			82	11-82	4	BIO			
	21750	STRUCTURE AND FUNCTION OF RIBONUCLEIC ACIDS		LA JOLLA	CALIFORNIA						140,674	205,211
7	R01 GM31696-01	MEARS, JOHN G	COLUMBIA UNIVERSITY			82	06-83	0	MBY			
	21750	REGULATION OF HUMAN GLOBIN GENE EXPRESSION		NEW YORK	NEW YORK						74,308	125,404
7	R01 GM31802-01	FINK, GERALD R	MASSACHUSETTS INSTITUTE OF TECHNOLOGY			82	11-82	3	MBY			
	21750	REGULATION OF HISTIDINE BIOSYNETHESIS IN YEAST		CAMBRIDGE	MASSACHUSETTS						24,500	37,118

**	0	*CENTERS (P50)		
**	1	PROGRAM PROJECTS (P01)	0	0
**	214	REGULAR PROJECTS (R01)	377,045	577,139
**	1	ALL OTHERS (P30, P41, R13, R23, R25)	16,005,471	23,171,331
**	216	TOTALS	5,000	5,000
			16,387,516	23,753,470

T	GRANT NUMBER / PROG-AREA	INVESTIGATOR / PROJECT TITLE	GRANTEE INSTITUTION	CITY	FY / STATE	END-DATE	FUT-YRS AVAILABLE	DIRECT	IRG SUB DOLLARS TOTAL
		GENETICS OF GROWTH AND DIFFERENTIATION SECTION							
		REARRANGEMENT OF GENETIC ELEMENTS							
5	R01 GM21887-07	GUILD, WALTER R	DUKE UNIVERSITY		82	06-83	1	45,194	MBC
	21780	PNEUMOCOCCAL PHAGE AS GENETIC TOOLS		DURHAM	NORTH CAROLINA				67,191
5	R01 GM22007-08	OHTSUBO, EIICHI	STATE UNIVERSITY NEW YORK	STONY BROOK	82	01-83	3	104,704	MG
	21780	STRUCTURE AND FUNCTION OF INSERTION AND TN ELEMENTS		STONY BROOK	NEW YORK				152,033
5	R01 GM24270-05	PATO, MARTIN L	NATIONAL JEWISH HOSPITAL & RESEARCH CTR		82	12-82	3	57,000	MG
	21780	EXCISION AND REPLICATION OF MU VIRUS DNA		DENVER	COLORADO				82,935
5	R01 GM24347-05	JASKUNAS, S RICHARD	INDIANA UNIVERSITY BLOOMINGTON		82	11-82	1	79,736	MG
	21780	GENETIC REARRANGEMENTS		BLOOMINGTON	INDIANA				110,200
5	R01 GM24589-05	DEONIER, RICHARD C	UNIVERSITY OF SOUTHERN CALIFORNIA		82	12-82	3	67,856	MG
	21780	SPECIALIZED RECOMBINATION IN THE E COLI CHROMOSOME		LOS ANGELES	CALIFORNIA				99,070
5	R01 GM24960-05	SHAPIRO, JAMES A	UNIVERSITY OF CHICAGO		82	12-82	3	115,345	MG
	21780	DNA INSERTION MECHANISMS: TRANSPOSONS AND CARCINOGENS		CHICAGO	ILLINOIS				180,237
5	R01 GM25326-05	KLECKNER, NANCY E	HARVARD UNIVERSITY		82	06-83	3	93,118	MG
	21780	ILLEGITIMATE RECOMBINATION BY DRUG RESISTANCE ELEMENTS		CAMBRIDGE	MASSACHUSETTS				143,402
5	R01 GM27253-03	MURPHY, ELLEN	PUBLIC HLTH RES INST OF THE CITY OF NY		82	11-82	0	57,200	MBC
	21780	SITE SPECIFIC RECOMBINATION IN STAPHYLOCOCCUS AUREUS		NEW YORK	NEW YORK				79,462
5	P01 GM27643-03	BUKHARI, AHMAD I	COLD SPRING HARBOR LABORATORY		82	05-83	0	500,317	SSS
	21780	MOVABLE GENETIC ELEMENTS		COLD SPRING HARB	NEW YORK				891,065
2	R01 GM27929-04	BROACH, JAMES R	STATE UNIVERSITY NEW YORK	STONY BROOK	82	08-83	4	80,000	GEN
	21780	GENE EXPRESSION OF THE YEAST PLASMID, 2 MICRON CIRCLE		STONY BROOK	NEW YORK				115,595
5	R01 GM28038-02	ZAHLER, STANLEY A	CORNELL UNIVERSITY ITHACA		81	11-82	0	37,656	MG
	21780	THE DNA OF SPECIALIZED TRANSDUCING PHASE SPBETA		ITHACA	NEW YORK				50,105
5	R01 GM28142-03	SYVANEN, MICHAEL	HARVARD UNIVERSITY		82	06-83	1	76,607	MG
	21780	GENETIC ANALYSIS OF TRANSPOSABLE ELEMENTS		BOSTON	MASSACHUSETTS				148,081
5	R01 GM28470-03	GRINDLEY, NIGEL D	YALE UNIVERSITY		82	06-83	3	79,226	MG
	21780	MECHANISM OF INSERTION SEQUENCE TRANSLOCATION		NEW HAVEN	CONNECTICUT				132,556
5	R01 GM28609-02	PORTER, RONALD D	PENNSYLVANIA STATE UNIVERSITY UNIV PARK		82	01-83	1	60,299	MG
	21780	DEVELOPMENT OF GENETIC ANALYSIS IN BLUE-GREEN ALGAE		UNIVERSITY PARK	PENNSYLVANIA				82,007
5	R01 GM28904-02	ROEDER, GLENNA S	YALE UNIVERSITY		82	03-83	1	61,697	GEN
	21780	MOLECULAR MECHANISMS OF GENETIC RECOMBINATION IN YEAST		NEW HAVEN	CONNECTICUT				95,161
5	R01 GM29054-03	RUBIN, GERALD M	CARNEGIE INSTITUTION OF WASHINGTON D C		82	08-83	1	79,078	CTY
	21780	CONTROL OF GENE EXPRESSION IN ANIMAL CELLS		BALTIMORE	MARYLAND				130,584

T	GRANT NUMBER / PROG-AREA	INVESTIGATOR / PROJECT TITLE	GRANTEE INSTITUTION	CITY	FY / STATE	END-DATE	FUT-YRS AVAILABLE DIRECT	IRG SUB DOLLARS TOTAL
	GENETICS OF GROWTH AND DIFFERENTIATION SECTION REARRANGEMENT OF GENETIC ELEMENTS							
5	R01 GM29067-02 21780	CASADABAN, MALCOLM J GENE FUSION AND THE STUDY OF DNA TRANSPOSITION	UNIVERSITY OF CHICAGO	CHICAGO	82 ILLINOIS	03-83	0 49,957	MG 77,292
5	R01 GM29217-06 21780	ZUBAY, GEOFFREY L TRANSCRIPTIONAL CONTROL IN INFECTIOUS PLASMIDS	COLUMBIA UNIVERSITY	NEW YORK	82 NEW YORK	08-83	0 63,957	MBC 108,535
5	R01 GM29480-02 21780	FARABAUGH, PHILIP J THE MOLECULAR GENETICS OF THE YEAST TRANSPOSON TY1	UNIVERSITY OF CONNECTICUT HEALTH CENTER	FARMINGTON	82 CONNECTICUT	08-83	1 74,623	GEN 106,097
1	R01 GM30333-01 CA 21780	CHILDS, GEOFFREY J MOBILIZATION OF TANDEM REPETITIVE GENE FAMILIES	YESHIVA UNIVERSITY	NEW YORK	82 NEW YORK	01-83	2 79,552	GEN 131,162
1	R01 GM30619-01 21780	ERREDE, BEVERLY J REGULATION OF GENE EXPRESSION BY TRANSPOSABLE ELEMENTS	UNIVERSITY OF NORTH CAROLINA CHAPEL HILL	CHAPEL HILL	82 NORTH CAROLINA	06-83	2 75,300	GEN 95,778
2	R01 GM30731-02 AI 21780	ROWND, ROBERT H THE CONTROL OF THE REPLICATION OF BACTERIAL EPISOMES	NORTHWESTERN UNIVERSITY	CHICAGO	82 ILLINOIS	08-83	4 153,000	MBY 225,480
1	R01 GM30816-01 21780	POTTER, STANLEY S EUCARYOTIC TRANSPOSABLE GENETIC ELEMENTS	WESLEYAN UNIVERSITY	MIDDLETOWN	82 CONNECTICUT	06-83	2 73,000	GEN 102,028
1	R01 GM30948-01 21780	ENGELS, WILLIAM R BEHAVIOR OF P FACTORS: MOVABLE ELEMENTS IN DROSOPHILA	UNIVERSITY OF WISCONSIN MADISON	MADISON	82 WISCONSIN	06-83	2 55,000	GEN 75,640
1	R01 GM31030-01 21780	SIGNER, ETHAN R MOLECULAR GENETICS OF RHIZOBIUM NODULATION PLASMIDS	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	CAMBRIDGE	82 MASSACHUSETTS	06-83	2 73,658	GEN 105,484
1	R01 GM31093-01 21780	BURR, BENJAMIN TRANSPOSABLE GENETIC ELEMENTS OF MAIZE	ASSOCIATED UNIV-BROOKHAVEN NATL LAB	UPTON	82 NEW YORK	07-83	1 80,255	GEN 126,218

**	0	#CENTERS (P50)		
**	1	PROGRAM PROJECTS (P01)	0	0
**	25	REGULAR PROJECTS (R01)	500,317	891,065
**	0	ALL OTHERS (P30, P41, R13, R23, R25)	1,873,018	2,822,333
**	26	TOTALS	0	0
			2,373,335	3,713,398

T	GRANT NUMBER / PROG-AREA	INVESTIGATOR / PROJECT TITLE	GRANTEE INSTITUTION	CITY	FY / STATE	END-DATE	FUT-YRS AVAILABLE	DIRECT	IRG SUB DOLLARS TOTAL
	GENETICS OF GROWTH AND DIFFERENTIATION SECTION DYNAMICS OF GENES IN POPULATIONS								
5	P01 GM11546-19 21800	COCKERHAM, C CLARK QUANTITATIVE GENETICS RESEARCH PROGRAM	NORTH CAROLINA STATE UNIVERSITY	RALEIGH RALEIGH	82 NORTH CAROLINA	11-82	3	296,199	SSS 413,879
5	R01 GM16074-14 21800	ENFIELD, FRANKLIN D INVESTIGATIONS IN QUANTITATIVE GENETICS	UNIVERSITY OF MINNESOTA OF MNPLS-ST PAUL	MINNEAPOLIS	82 MINNESOTA	08-83	0	56,000	GEN 76,160
5	R01 GM16370-12 21800	PHAFF, H J GENOME COMPARISON AS A BASIS FOR YEAST SYSTEMATICS	UNIVERSITY OF CALIFORNIA DAVIS	DAVIS	82 CALIFORNIA	11-82	0	64,682	BM 84,485
2	R01 GM19770-10 21800	HIRAIZUMI, YUICHIRO MALE RECOMBINATION-MUTATOR SYSTEM IN DROSOPHILA	UNIVERSITY OF TEXAS AUSTIN	AUSTIN	82 TEXAS	03-83	2	90,130	GEN 120,453
5	R01 GM19848-09 21800	LEVIN, BRUCE R PROTEIN VARIATION AND SELECTION MECHANISMS IN E. COLI	UNIVERSITY OF MASSACHUSETTS AMHERST	AMHERST	82 MASSACHUSETTS	11-82	1	63,009	MBC 91,363
2	R01 GM20293-10 21800	NEI, MASATOSHI THEORETICAL POPLUATION GENETICS AND ITS APPLICATIONS	UNIVERSITY OF TEXAS HLTH SCI CTR HOUSTON	HOUSTON	82 TEXAS	01-83	4	61,810	GEN 85,298
5	R01 GM21133-07 21800	KOEHN, RICHARD K GENETICS AND EVOLUTION OF PHYSIOLOGICAL VARIATION	STATE UNIVERSITY NEW YORK STONY BROOK	STONY BROOK	82 NEW YORK	03-83	2	59,543	GEN 87,916
5	R01 GM21135-09 21800	EWENS, WARREN J STOCHASTIC PROCESSES IN GENETIC POPULATIONS	UNIVERSITY OF PENNSYLVANIA	PHILADELPHIA	82 PENNSYLVANIA	06-83	0	14,212	GEN 23,450
2	R01 GM21179-09 21800	LEWONTIN, RICHARD C GENETIC VARIATION OF PROTEINS IN NATURAL POPULATIONS	HARVARD UNIVERSITY	CAMBRIDGE	82 MASSACHUSETTS	02-83	4	129,584	GEN 192,867
5	R01 GM21509-08 21800	WILSON, ALLAN C REGULATION AS A BASIS FOR ORGANISMAL DIFFERENCES	UNIVERSITY OF CALIFORNIA BERKELEY	BERKELEY	82 CALIFORNIA	11-82	2	105,745	MGN 138,526
2	R01 GM22523-07 21800	WADE, MICHAEL J GENETICAL CONSEQUENCES OF EXTINCTION DISPERSION	UNIVERSITY OF CHICAGO	CHICAGO	82 ILLINOIS	08-83	2	41,413	GEN 63,478
5	R01 GM23007-05	THROCKMORTON, LYNN H PROTEIN DIFFERENTIATION IN DROSOPHILA	UNIVERSITY OF CHICAGO	CHICAGO	80 ILLINOIS	03-83	0	88,263	GEN 132,812
3	R01 GM23007-05S1 21800	THROCKMORTON, LYNN H PROTEIN DIFFERENTIATION IN DROSOPHILA	UNIVERSITY OF CHICAGO	CHICAGO	81 ILLINOIS	03-83	0	6,902	GEN 12,216
5	R01 GM23047-07 21800	MOSES, MONTROSE J CHROMOSOME ANALYSIS IN LEMURIFORM PRIMATES	DUKE UNIVERSITY	DURHAM	82 NORTH CAROLINA	06-83	0	54,918	MGN 82,377
2	R01 GM23504-06 21800	JOHNSON, GEORGE B STUDIES OF HIDDEN ELECTROPHORETIC VARIATION	WASHINGTON UNIVERSITY	SAINT LOUIS	82 MISSOURI	08-83	2	72,042	GEN 111,115
5	R01 GM23550-06 21800	PIECZENIK, GEORGE GENOTYPIC SELECTION: MAPPING SYNTAX-STRUCTURE-FUNCTION	RUTGERS THE STATE UNIV NEW BRUNSWICK	NEW BRUNSWICK	82 NEW JERSEY	08-83	0	36,186	GEN 54,421

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		GENETICS OF GROWTH AND DIFFERENTIATION SECTION									
		DYNAMICS OF GENES IN POPULATIONS									
2	R01 GM24125-06	CHAPMAN, VERNE M	ROSWELL PARK MEMORIAL INSTITUTE		82	07-83	2			MGN	
	21800	REGULATION OF X-CHROMOSOME DIFFERENTIATION IN MAMMALS		BUFFALO	NEW YORK			92,770	126,775		
5	R01 GM24681-05	TASHIAN, RICHARD E	UNIVERSITY OF MICHIGAN AT ANN ARBOR		82	11-82	0			GEN	
	21800	EVOLUTION OF MAMMALIAN CARBONIC ANHYDRASES		ANN ARBOR	MICHIGAN			134,195	212,028		
5	R01 GM26758-02	WATT, WARD B	STANFORD UNIVERSITY		82	11-82	1			GEN	
	21800	NATURAL GENETIC VARIATION: IN VIVO METABOLIC IMPACT		STANFORD	CALIFORNIA			58,014	90,502		
5	R01 GM27014-03	GREENBAUM, IRA F	TEXAS AGRI AND MECH UNIV COLLEGE STATION		82	02-83	0			MGN	
	21800	CHROMOSOMAL REARRANGEMENT INCORPORATION IN MAMMALS		COLLEGE STATION	TEXAS			45,783	58,480		
5	R01 GM27021-03	TEMPLETON, ALAN R	WASHINGTON UNIVERSITY		82	06-83	0			GEN	
	21800	SELECTION, COADAPTATION AND SPECIATION IN DROSOPHILA		SAINT LOUIS	MISSOURI			32,260	50,003		
5	R01 GM27120-03	LANDE, RUSSELL S	UNIVERSITY OF CHICAGO		82	08-83	0			GEN	
	21800	CORRELATED CHARACTERS IN COMPLEX GENETIC SYSTEMS		CHICAGO	ILLINOIS			20,820	35,186		
5	R01 GM27270-03	GILLESPIE, DAVID H	HAHNEMANN MED COL & HOSP OF PHILADELPHIA		82	12-82	0			MGN	
	21800	STRUCTURE AND FUNCTION OF REPEATED DNA IN PRIMATES		PHILADELPHIA	PENNSYLVANIA			80,528	126,038		
5	R01 GM27915-03	YARDLEY, DARRELL G	CLEMSON UNIVERSITY		82	03-83	0			GEN	
	21800	THE AMYLASE SYSTEM OF DROSOPHILA PSEUDOOBSCURA		CLEMSON	SOUTH CAROLINA			31,503	47,570		
5	R01 GM27965-03	HAMILTON, ANDREW E	TULANE UNIVERSITY OF LOUISIANA		82	06-83	0			MGN	
	21800	SIGNIFICANCE OF CENTRIC FUSION IN LEMUR EVOLUTION		NEW ORLEANS	LOUISIANA			41,496	60,999		
5	R01 GM28016-03	FELDMAN, MARCUS W	STANFORD UNIVERSITY		82	06-83	0			GEN	
	21800	POPULATION GENETICS THEORY		STANFORD	CALIFORNIA			55,172	87,172		
5	R01 GM28024-02	HOFFMANN, RICHARD J	IOWA STATE UNIVERSITY OF SCIENCE & TECH		81	11-82	0			GEN	
	21800	FUNCTION OF GENETICALLY DETERMINED ENZYME VARIATION		AMES	IOWA			41,752	55,948		
5	R01 GM28336-02	HOCHBERG, KENNETH J	CASE WESTERN RESERVE UNIVERSITY		81	08-83	0			SSS	
	21800	POPULATION PROCESSES IN GENETICS AND BIOLOGY		CLEVELAND	OHIO			12,745	19,245		
5	R01 GM28455-02	LAURIE-AHLBERG, CATHY C	NORTH CAROLINA STATE UNIVERSITY RALEIGH		82	01-83	1			GEN	
	21800	GENETIC VARIATION OF FLIGHT METABOLISM IN DROSOPHILA		RALEIGH	NORTH CAROLINA			49,665	69,253		
5	R01 GM28574-02	CHAKRABORTY, RANAJIT	UNIVERSITY OF TEXAS HLTH SCI CTR HOUSTON		82	11-82	0			MGN	
	21800	EVOLUTIONARY DYNAMICS OF COMPLEX GENETIC TRAITS		HOUSTON	TEXAS			13,750	18,975		
5	R01 GM28672-02	YOKOYAMA, SHOZO	WASHINGTON UNIVERSITY		82	12-82	1			MGN	
	21800	POPULATION GENETICS OF DELETERIOUS GENES		SAINT LOUIS	MISSOURI			26,270	40,719		
5	R01 GM28779-02	GEER, BILLY W	KNOX COLLEGE		82	03-83	1			GEN	
	21800	GENETIC AND DIETARY CONTROL OF THE PENTOSE SHUNT		GALESBURG	ILLINOIS			45,650	68,981		

TABLE-4 RESEARCH GRANTS ACTIVE AS OF 09-30-82 BY PROGRAM AREA AND GRANT NUMBER

T	GRANT NUMBER / PROG-AREA	INVESTIGATOR / PROJECT TITLE	GRANTEE INSTITUTION	CITY	FY / STATE	END-DATE	FUT-YRS AVAILABLE	DIRECT	IRG SUB DOLLARS TOTAL
GENETICS OF GROWTH AND DIFFERENTIATION SECTION									
		DYNAMICS OF GENES IN POPULATIONS							
5	R01 GM28926-03 21800	RILEY, MONICA EVOLUTION OF THE BACTERIAL GENOME	STATE UNIVERSITY NEW YORK	STONY BROOK STONY BROOK	82 NEW YORK	07-83	0	63,915	MG 94,599
5	R01 GM28998-02 21800	TOMPKINS, LAURIE NEUROGENETICS OF CHEMOSENSORY BEHAVIOR IN DROSOPHILA	TEMPLE UNIVERSITY	PHILADELPHIA	82 PENNSYLVANIA	03-83	1	39,130	GEN 52,873
1	R01 GM30140-01 21800	WEAVER, STEVEN G THE MAINTENANCE OF SEQUENCE HOMOLOGY BY GENE CONVERSION	UNIVERSITY OF ILLINOIS CHICAGO CIRCLE	CHICAGO	82 ILLINOIS	01-83	2	65,048	MGN 94,753
1	R01 GM30144-01 21800	BROWN, WESLEY M EVOLUTIONARY GENETICS OF MITOCHONDRIAL DNA	UNIVERSITY OF MICHIGAN AT ANN ARBOR	ANN ARBOR	82 MICHIGAN	01-83	2	111,057	MGN 148,537
5	R01 GM30201-02 21800	DYKHUIZEN, DANIEL E GENETIC BASIS OF SELECTION IN NATURAL POPULATIONS	WASHINGTON UNIVERSITY	SAINT LOUIS	82 MISSOURI	08-83	3	89,796	GEN 138,634
1	R01 GM30351-01 21800	HARTL, DANIEL L MEASURES OF POPULATION FITNESS IN DROSOPHILA	PURDUE UNIVERSITY WEST LAFAYETTE	WEST LAFAYETTE	82 INDIANA	11-82	2	98,555	GEN 137,250
1	R01 GM30959-01 21800	ADAMS, JULIAN P EVOLUTION IN YEAST: GENE DUPLICATION AND DIVERGENCE	UNIVERSITY OF MICHIGAN AT ANN ARBOR	ANN ARBOR	82 MICHIGAN	07-83	2	56,130	GEN 83,741
1	R01 GM30998-01 21800	LI, WEN-HSIUNG STATISTICAL STUDIES OF DNA EVOLUTION	UNIVERSITY OF TEXAS HLTH SCI CTR HOUSTON	HOUSTON	82 TEXAS	06-83	2	24,564	GEN 33,898

**	0	*CENTERS (P50)	0	0
**	1	PROGRAM PROJECTS (P01)	296,199	413,879
**	39	REGULAR PROJECTS (R01)	2,275,007	3,309,096
**	0	ALL OTHERS (P30, P41, R13, R23, R25)	0	0
**	40	TOTALS	2,571,206	3,722,975

SUMMARY OF GENETICS OF GROWTH AND DIFFERENTIATION SECTION

***	0	*CENTERS (P50)	0	0
***	8	PROGRAM PROJECTS (P01)	2,977,089	4,614,015
***	541	REGULAR PROJECTS (R01)	38,956,970	56,401,082
***	5	ALL OTHERS (P30, P41, R13, R23, R25)	43,735	43,735
***	554	TOTALS	41,977,794	61,058,832

T	GRANT NUMBER / PROG-AREA	INVESTIGATOR / PROJECT TITLE	GRANTEE INSTITUTION	CITY	FY / STATE	END-DATE	FUT-YRS AVAILABLE	IRG SUB DOLLARS DIRECT	TOTAL
GENETICS CENTERS									
	GENETICS CENTERS								
5	P50 GM20138-09	SCHMICKEL, ROY	UNIVERSITY OF PENNSYLVANIA		82	04-83	1		SSS
*	21911	HUMAN GENETICS CENTER SUPPORT		PHILADELPHIA	PENNSYLVANIA			611,180	855,548
**	1	*CENTERS (P50)						611,180	855,548
**	0	PROGRAM PROJECTS (P01)						0	0
**	0	REGULAR PROJECTS (R01)						0	0
**	0	ALL OTHERS (P30, P41, R13, R23, R25)						0	0
**	1	TOTALS						611,180	855,548

T	GRANT NUMBER / PROG-AREA	INVESTIGATOR / PROJECT TITLE	GRANTEE INSTITUTION	CITY	FY / STATE	END-DATE	FUT-YRS AVAILABLE	IRG DOLLARS DIRECT	SUB DOLLARS TOTAL
GENETICS CENTERS									
		GENETICS CENTERS							
5	P50 GM20124-10	ROSENBERG, LEON E	YALE UNIVERSITY	NEW HAVEN	82 CONNECTICUT	03-83	0	524,110	SSS 807,840
*	21912	STUDY OF HUMAN GENETICS AND INHERITED DISEASE							
								524,110	807,840
**	1	*CENTERS (P50)						0	0
**	0	PROGRAM PROJECTS (P01)						0	0
**	0	REGULAR PROJECTS (R01)						0	0
**	0	ALL OTHERS (P30, P41, R13, R23, R25)						524,110	807,840
**	1	TOTALS							

T	GRANT NUMBER / PROG-AREA	INVESTIGATOR / PROJECT TITLE	GRANTEE INSTITUTION	CITY	FY / STATE	END-DATE	FUT-YRS AVAILABLE	IRG SUB DOLLARS DIRECT	TOTAL
GENETICS CENTERS									
	GENETICS CENTERS								
2	P50 GM15253-16	MOTULSKY, ARNO G	UNIVERSITY OF WASHINGTON		82	05-83	4		SRC
*	21915	CENTER FOR INHERITED DISEASES		SEATTLE	WASHINGTON			502,970	673,477
	** 1	*CENTERS (P50)						502,970	673,477
	** 0	PROGRAM PROJECTS (P01)						0	0
	** 0	REGULAR PROJECTS (R01)						0	0
	** 0	ALL OTHERS (P30, P41, R13, R23, R25)						0	0
	** 1	TOTALS						502,970	673,477

T	GRANT NUMBER / PROG-AREA	INVESTIGATOR / PROJECT TITLE	GRANTEE INSTITUTION	CITY / STATE	FY	END-DATE	FUT-YRS AVAILABLE	IRG SUB DOLLARS DIRECT	TOTAL
GENETICS CENTERS									
	GENETICS CENTERS								
5	P50 GM17702-12	SEEGMILLER, JARVIS E	UNIVERSITY OF CALIFORNIA SAN DIEGO	LA JOLLA	82	11-82	3	428,982	SRC 561,966
*	21916	HUMAN BIOCHEMICAL GENETICS PROGRAM		CALIFORNIA					
								428,982	561,966
**	1	*CENTERS (P50)						0	0
**	0	PROGRAM PROJECTS (P01)						0	0
**	0	REGULAR PROJECTS (R01)						0	0
**	0	ALL OTHERS (P30, P41, R13, R23, R25)						428,982	561,966
**	1	TOTALS							

T	GRANT NUMBER / PROG-AREA	INVESTIGATOR / PROJECT TITLE	GRANTEE INSTITUTION	CITY	FY / STATE	END-DATE	FUT-YRS AVAILABLE DOLLARS DIRECT	IRG SUB DOLLARS TOTAL
GENETICS CENTERS								
GENETICS CENTERS								
5	P50 GM19100-10	NITOWSKY, HAROLD M	YESHIVA UNIVERSITY		82	11-82	0	SSS
*	21917	SUPPORT FOR GENETICS RESEARCH CENTER		NEW YORK	NEW YORK		367,200	682,992
**	1	*CENTERS (P50)					367,200	682,992
**	0	PROGRAM PROJECTS (P01)					0	0
**	0	REGULAR PROJECTS (R01)					0	0
**	0	ALL OTHERS (P30, P41, R13, R23, R25)					0	0
**	1	TOTALS					367,200	682,992
SUMMARY OF GENETICS CENTERS								
***	5	*CENTERS (P50)					2,434,442	3,581,823
***	0	PROGRAM PROJECTS (P01)					0	0
***	0	REGULAR PROJECTS (R01)					0	0
***	0	ALL OTHERS (P30, P41, R13, R23, R25)					0	0
***	5	TOTALS					2,434,442	3,581,823
SUMMARY OF GENETICS PROGRAM								
****	5	*CENTERS (P50)					2,434,442	3,581,823
****	11	PROGRAM PROJECTS (P01)					3,733,347	5,766,094
****	1,117	REGULAR PROJECTS (R01)					78,367,574	113,526,821
****	8	ALL OTHERS (P30, P41, R13, R23, R25)					52,735	52,735
****	1,141	TOTALS					84,588,098	122,927,473

T	GRANT NUMBER / PROG-AREA	INVESTIGATOR / PROJECT TITLE	GRANTEE INSTITUTION	CITY	FY / STATE	END-DATE	FUT-YRS AVAILABLE	DIRECT	IRG SUB DOLLARS TOTAL
	PHARMACOLOGY CENTERS, PROGRAM PROJECTS								
5	P50 GM12675-18	TEPHLY, THOMAS R	UNIVERSITY OF IOWA	IOWA CITY	82	11-82	1	539,000	PTR 740,020
*	11300	BIOCHEMICAL TOXICOLOGY AND PHARMACOLOGY			IOWA				
3	P50 GM12675-18S1	TEPHLY, THOMAS R	UNIVERSITY OF IOWA	IOWA CITY	82	11-82	1	74,182	PTR 102,371
*	11300	BOCHEMICAL TOXICOLOGY AND PHARMACOLOGY			IOWA				
5	P50 GM15431-15	OATES, JOHN A	VANDERBILT UNIVERSITY	NASHVILLE	82	11-82	0	991,453	SSS 1,517,625
*	11300	RESEARCH CENTER FOR PHARMACOLOGY AND DRUG TOXICOLOGY			TENNESSEE				
5	P50 GM20387-10	GAFFNEY, THOMAS E	MEDICAL UNIVERSITY OF SOUTH CAROLINA	CHARLESTON	82	01-83	0	423,193	PTR 553,453
*	11300	INTERDISCIPLINARY PROGRAM IN PHARMACOLOGY/TOXICOLOGY			SOUTH CAROLINA				
5	P50 GM20852-09	LEVY, GERHARD	STATE UNIVERSITY OF NEW YORK AT BUFFALO	BUFFALO	82	12-82	1	251,587	PTR 363,342
*	11700	CLINICAL PHARMACOKINETICS AND BIOPHARMACEUTICS			NEW YORK				
2	P01 GM22220-06	GOLDBERG, LEON I	UNIVERSITY OF CHICAGO	CHICAGO	82	11-82	2	229,471	PTR 351,662
	11700	CLINICAL PHARMACOLOGY CENTER			ILLINOIS				
2	P01 GM22371-07	ATKINSON, ARTHUR J, JR	NORTHWESTERN UNIVERSITY	CHICAGO	82	03-83	2	137,109	PTR 189,210
	11700	CLINICAL PHARMACOLOGY OF COMMONLY USED DRUGS			ILLINOIS				
5	P01 GM26611-04	MITCHELL, JERRY R	BAYLOR COLLEGE OF MEDICINE	HOUSTON	82	07-83	0	259,533	PTR 352,965
	11300	MOLECULAR BASIS OF HUMAN DRUG TOXICITY			TEXAS				
5	P50 GM26691-04	BENET, LESLIE Z	UNIVERSITY OF CALIFORNIA SAN FRANCISCO	SAN FRANCISCO	82	07-83	1	235,605	PTR 297,959
*	11300	PHARMACOKINETICS/PHARMACODYNAMICS			CALIFORNIA				
5	P01 GM27028-03	WEBER, WENDELL W	UNIVERSITY OF MICHIGAN AT ANN ARBOR	ANN ARBOR	82	12-82	2	188,808	SRC 298,317
	11700	EXPERIMENTAL AND CLINICAL PHARMACOGENETICS			MICHIGAN				
3	P01 GM27028-03S1	WEBER, WENDELL W	UNIVERSITY OF MICHIGAN AT ANN ARBOR	ANN ARBOR	82	12-82	2	6,227	SRC 9,839
	11700	EXPERIMENTAL AND CLINICAL PHARMACOGENETICS			MICHIGAN				

			DIRECT	TOTAL
**	6	*CENTERS (P50)	2,515,020	3,574,770
**	5	PROGRAM PROJECTS (P01)	821,148	1,201,993
**	0	REGULAR PROJECTS (R01)	0	0
**	0	ALL OTHERS (P30, P41, R13, R23, R25)	0	0
**	11	TOTALS	3,336,168	4,776,763

T	GRANT NUMBER / PROG-AREA	INVESTIGATOR / PROJECT TITLE	GRANTEE INSTITUTION	CITY	STATE	FY	END-DATE	FUT-YRS AVAILABLE	IRG SUB DOLLARS DIRECT	TOTAL
PHARMACOLOGY										
		DRUG DELIVERY, ABSORPTION, DISTRIBUTION, AND ELIMINATION								
5	R01 GM16503-14	FUJIMOTO, JAMES M	MEDICAL COLLEGE OF WISCONSIN			82	11-82	2		PHRA
	11850	ALTERATION IN DRUG METABOLISM BY CERTAIN CARBAMATES		MILWAUKEE	WISCONSIN				41,307	61,961
5	R01 GM19568-15	LEVY, GERHARD	STATE UNIVERSITY OF NEW YORK AT BUFFALO			82	06-83	0		PHRA
	11850	PHARMACOKINETICS OF SALICYLATES IN CHILDREN & RATS		BUFFALO	NEW YORK				62,616	90,949
2	R01 GM22369-07	JACKSON, MICHAEL J	GEORGE WASHINGTON UNIVERSITY			82	06-83	4		PHRA
	11750	DRUG TRANSPORT IN THE GI TRACT AND OTHER EPITHELIA		WASHINGTON	DIST OF COL				66,645	105,417
5	R01 GM24612-05	HUNT, C ANTHONY	UNIVERSITY OF CALIFORNIA SAN FRANCISCO			82	02-83	3		PHRA
	11750	LIPOSOMES IN VIVO: FOR DRUGS AND PRODRUGS		SAN FRANCISCO	CALIFORNIA				51,372	67,297
5	R01 GM26227-03	YATVIN, MILTON B	UNIVERSITY OF WISCONSIN MADISON			82	07-83	0		PHRA
	11750	ENGINEERING OF LIPOSOMES TO RELEASE DRUG BY HYPERTHERMIA		MADISON	WISCONSIN				41,069	58,729
2	R01 GM26676-04	SHEINER, LEWIS B	UNIVERSITY OF CALIFORNIA SAN FRANCISCO			82	08-83	4		PHRA
	11350	NEW WAYS TO INVESTIGATE AND FORECAST PHARMACOKINETICS		SAN FRANCISCO	CALIFORNIA				115,390	146,661
5	R01 GM27167-03	BODOR, NICHOLAS S	UNIVERSITY OF FLORIDA			82	11-82	0		PHRA
	11850	REDOX SYSTEMS FOR DELIVERY OF DRUGS TO THE BRAIN		GAINESVILLE	FLORIDA				42,655	60,173
5	R01 GM27802-03	SCHOTT, HANS	TEMPLE UNIVERSITY			82	05-83	0		PHRA
	11850	EFFECT OF ELECTROLYTES ON NONIONIC SURFACTANTS		PHILADELPHIA	PENNSYLVANIA				25,835	39,528
5	R01 GM27924-03	HAYTON, WILLIAM L	WASHINGTON STATE UNIVERSITY			82	01-84	0		PHRA
	11850	RATE LIMITING BARRIERS IN INTESTINAL DRUG ABSORPTION		PULLMAN	WASHINGTON				30,208	42,947
1	R01 GM29434-01A1	FELDHOFF, RICHARD C	UNIVERSITY OF LOUISVILLE			82	07-83	2		PBC
	11850	HUMAN PLASMA ALBUMIN: LIGAND BINDING		LOUISVILLE	KENTUCKY				47,617	62,220
1	R01 GM30163-01	SZOKA, FRANCIS C	UNIVERSITY OF CALIFORNIA SAN FRANCISCO			82	01-83	2		PHRA
	11850	CONTROLLED DISPOSITION OF LIPOSOMES		SAN FRANCISCO	CALIFORNIA				92,960	121,778
1	R01 GM30840-01	ZAKIM, DAVID	UNIVERSITY OF CALIFORNIA SAN FRANCISCO			82	07-83	2		PHRA
	ES 11750	METABOLISM OF DRUGS, TOXINS, & ENVIRONMENTAL POLLUTANTS		SAN FRANCISCO	CALIFORNIA				63,634	77,017
7	R01 GM31568-01	AMIDON, GORDON L	UNIVERSITY OF KANSAS LAWRENCE			82	06-83	0		PHRA
	11750	DRUG ABSORPTION THROUGH MEMBRANE METABOLISM		LAWRENCE	KANSAS				36,034	45,695

**	0	*CENTERS (P50)	0	0
**	0	PROGRAM PROJECTS (P01)	0	0
**	13	REGULAR PROJECTS (R01)	717,342	980,372
**	0	ALL OTHERS (P30, P41, R13, R23, R25)	0	0
**	13	TOTALS	717,342	980,372

TABLE-4 RESEARCH GRANTS ACTIVE AS OF 09-30-82 BY PROGRAM AREA AND GRANT NUMBER

T	GRANT NUMBER / PROG-AREA	INVESTIGATOR / PROJECT TITLE	GRANTEE INSTITUTION	CITY	FY / STATE	END-DATE	FUT-YRS AVAILABLE	DOLLARS DIRECT	IRG SUB DOLLARS TOTAL
PHARMACOLOGY									
DRUG METABOLISM									
5	R01 GM11973-17 11760	FRYDMAN, BENJAMIN J BIOSYNTHETIC INTERMEDIATES OF PORPHYRINS	UNIVERSITY OF BUENOS AIRES	BUENOS AIRES	82 ARGENTINA	08-83	1	14,900	BMT 14,900
5	R01 GM16488-15 11360	ESTABROOK, RONALD W HEPATIC MICROSOMAL DRUG OXIDATION	UNIVERSITY OF TEXAS HLTH SCI CTR DALLAS	DALLAS	82 TEXAS	08-83	0	119,723	PTR 161,515
5	R01 GM19036-14 11860	PETERSON, JULIAN A REGULATION OF MICROBIAL OXIDATION REACTIONS	UNIVERSITY OF TEXAS HLTH SCI CTR DALLAS	DALLAS	82 TEXAS	04-83	2	51,895	BIO 69,934
5	R01 GM21310-08 11760	HOLTZMAN, JORDAN L CYTOCHROME-REDUCTASE ACTIVATION IN HYDROXYLATION	UNIVERSITY OF MINNESOTA OF MNPLS-ST PAUL	MINNEAPOLIS	82 MINNESOTA	07-83	0	63,819	PHRA 78,497
5	R01 GM22688-06 11760	KUPFER, DAVID PROSTAGLANDINS: INTERACTIONS WITH MONOOXYGENASES	WORCESTER FDN FOR EXPER BIOLOGY	SHREWSBURY	81 MASSACHUSETTS	03-83	0	63,467	PHRA 97,446
5	R01 GM24844-05 11860	HUH, MARTIN M PHARMACOLOGY OF BIOGENIC AMINE METHYLTRANSFERASES	ROCKEFELLER UNIVERSITY	NEW YORK	81 NEW YORK	03-83	0	59,541	PHRA 88,002
5	R01 GM25136-05 11760	TRAGER, WILLIAM F PRODUCT RATIOS AND MICROSOMAL MULTIPLICITY	UNIVERSITY OF WASHINGTON	SEATTLE	82 WASHINGTON	03-83	1	53,555	PHRA 71,371
5	R01 GM25373-03 11860	NELSON, WENDEL L METABOLISM OF BETA-ADRENERGIC BLOCKERS-CHEMICAL ASPECTS	UNIVERSITY OF WASHINGTON	SEATTLE	81 WASHINGTON	11-82	0	39,757	PHRA 52,934
5	R01 GM25515-05 11760	ORTIZ DE MONTELLANO, PAUL R SELECTIVE DESTRUCTION OF CYTOCHROME P-450 BY DRUGS	UNIVERSITY OF CALIFORNIA SAN FRANCISCO	SAN FRANCISCO	82 CALIFORNIA	06-83	1	68,261	PHRA 86,477
5	R01 GM25738-03 11860	GRAY, ROBERT D CARBON MONOXIDE BINDING TO CYTOCHROMES P-450 & P-448	UNIVERSITY OF LOUISVILLE	LOUISVILLE	81 KENTUCKY	06-83	0	33,182	BMT 52,759
2	R01 GM25923-04 11760	GROVES, JOHN T MOLECULAR PROBES OF THE MECHANISM OF CYTOCHROME P-450	UNIVERSITY OF MICHIGAN AT ANN ARBOR	ANN ARBOR	82 MICHIGAN	11-82	3	77,579	PB 122,575
2	R01 GM25953-04 ES 11760	TU, SHIAO-CHUN STRUCTURE AND MECHANISM OF FLAVOPROTEIN HYDROXYLASES	UNIVERSITY OF HOUSTON AT HOUSTON	HOUSTON	82 TEXAS	03-83	2	78,448	PB 89,436
5	R01 GM26024-03 11860	CHO, ARTHUR K NITROGEN OXIDATION IN DRUG METABOLISM	UNIVERSITY OF CALIFORNIA LOS ANGELES	LOS ANGELES	81 CALIFORNIA	01-83	0	60,561	PHRA 79,335
5	R01 GM26114-05 11760	SCHENKMAN, JOHN B INDUCTION AND MODE OF ACTION OF HEPATIC DRUG OXIDASE	UNIVERSITY OF CONNECTICUT HEALTH CENTER	FARMINGTON	82 CONNECTICUT	05-83	0	121,207	ET 175,300
5	R01 GM26221-03 11760	TEPHLY, THOMAS R MORPHINE AND ESTROGEN GLUCURONYLTRANSFERASE ACTIVITIES	UNIVERSITY OF IOWA	IOWA CITY	81 IOWA	03-83	0	44,748	PHRA 61,752
2	R01 GM26548-04 11760	SCHENKMAN, JOHN B ACTIVE OXYGEN GENERATION BY HEPATIC MICROSOMES	UNIVERSITY OF CONNECTICUT HEALTH CENTER	FARMINGTON	82 CONNECTICUT	08-83	4	76,621	TOX 107,237

T	GRANT NUMBER / PROG-AREA	INVESTIGATOR / PROJECT TITLE	GRANTEE INSTITUTION	CITY	FY / STATE	END-DATE	FUT-YRS AVAILABLE DOLLARS DIRECT	IRG SUB DOLLARS TOTAL
PHARMACOLOGY								
	DRUG METABOLISM							
5	R01 GM27151-03	WATERMAN, MICHAEL R	UNIVERSITY OF TEXAS HLTH SCI CTR DALLAS		82	03-83	0	BIO
	11760	MOLECULAR BASIS OF CYTOCHROME P-450 INDUCTION		DALLAS	TEXAS		15,461	20,950
5	R01 GM27259-03	SAEHGER, PAUL H	MONTEFIORE HOSPITAL AND MEDICAL CENTER		81	10-82	0	PHRA
	11760	NON-INVASIVE METHODS FOR STUDY OF DRUG METABOLISM		NEW YORK	NEW YORK		75,043	86,418
5	R01 GM27590-03	POWIS, GARTH	MAYO FOUNDATION		82	11-82	0	PHRA
	11860	ROLE OF CYTOCHROME P-450 IN DRUG REDUCTION		ROCHESTER	MINNESOTA		82,441	106,705
1	R01 GM27675-01A1	STEGGLES, ALAN W	NORTHEASTERN OHIO UNIVERSITIES COLL MED		82	01-83	2	BIO
	AM 11760	THE REGULATION OF CYTOCHROME P-450-LM2 MRNA SYNTHESIS		ROOTSTOWN	OHIO		40,400	58,100
5	R01 GM27718-03	KEMPER, BYRON W	UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN		82	04-83	0	MBY
	11760	STRUCTURE AND FUNCTION OF CYTOCHROME P-450 GENES		URBANA	ILLINOIS		37,342	55,876
5	R01 GM27723-03	BRUNENGRABER, HENRI	MASSACHUSETTS INSTITUTE OF TECHNOLOGY		82	03-83	0	SSS
	11760	CONTINUOUS MS MONITORING OF LIVER ALCOHOL METABOLISM		CAMBRIDGE	MASSACHUSETTS		46,457	72,723
5	R01 GM27780-03	MANNERING, GILBERT J	UNIVERSITY OF MINNESOTA OF MNPLS-ST PAUL		82	08-83	0	PHRA
	11760	FUNCTIONS OF P-450-LINKED DRUG-METABOLIZING SYSTEMS		MINNEAPOLIS	MINNESOTA		118,471	164,675
5	R01 GM27836-03	NOVAK, RAYMOND F	NORTHWESTERN UNIVERSITY		82	03-83	0	BIO
	11760	MOLECULAR BASIS OF P450LM SUBSTRATE SPECIFICITY		CHICAGO	ILLINOIS		52,544	69,281
5	R01 GM28158-03	TYSON, CHARLES A	SRI INTERNATIONAL		82	08-83	0	PHRA
	11860	COMPARATIVE IN VITRO METABOLIC SYSTEMS		MENLO PARK	CALIFORNIA		54,605	110,724
5	R01 GM28342-03	VATSIS, KOSTAS P	NORTHWESTERN UNIVERSITY		82	06-83	0	PB
	11760	CYTOCHROME P-450-B5 INTERACTIONS IN DRUG METABOLISM		CHICAGO	ILLINOIS		47,249	65,204
1	R01 GM30701-01	ADESNIK, MILTON B	NEW YORK UNIVERSITY		82	01-83	2	MGN
	ES 11760	STRUCTURE AND REGULATION OF CYTOCHROME P-450 GENES		NEW YORK	NEW YORK		104,919	151,028
1	R01 GM30891-01	COCHRANE, BRUCE J	UNIVERSITY OF SOUTH FLORIDA		82	07-83	2	MBY
	11760	INDUCTION OF CYTOCHROME P-450'S IN DROSOPHILA		TAMPA	FLORIDA		37,434	51,735
1	R01 GM31001-01	JOHNSON, ERIC F	SCRIPPS CLINIC AND RESEARCH FOUNDATION		82	07-83	2	PB
	11760	CYTOCHROME P-450 POLYMORPHISM		LA JOLLA	CALIFORNIA		82,236	131,973
1	R01 GM31296-01	MASTERS, BETTIE SUE	MEDICAL COLLEGE OF WISCONSIN		82	05-83	2	PB
	11760	PROSTAGLANDIN 19- AND 20-HYDROXYLATION BY CYTOCHROME P-4		MILWAUKEE	WISCONSIN		52,904	70,014
**	0	*CENTERS (P50)					0	0
**	0	PROGRAM PROJECTS (P01)					0	0
**	30	REGULAR PROJECTS (R01)					1,874,770	2,624,876
**	0	ALL OTHERS (P30, P41, R13, R23, R25)					0	0
**	30	TOTALS					1,874,770	2,624,876

TABLE-4 RESEARCH GRANTS ACTIVE AS OF 09-30-82 BY PROGRAM AREA AND GRANT NUMBER

T	GRANT NUMBER / PROG-AREA	INVESTIGATOR / PROJECT TITLE	GRANTEE INSTITUTION	CITY	STATE	FY	END-DATE	FUT-YRS	AVAILABLE DOLLARS DIRECT	IRG SUB TOTAL
PHARMACOLOGY		MOLECULAR BASIS OF DRUG ACTION								
5	R01 GM11598-18 11770	GOSSELIN, ROBERT E DRUG EFFECTS ON SOLUTE TRANSPORT ACROSS EPITHELIA	DARTMOUTH COLLEGE	HANOVER	NEW HAMPSHIRE	82	05-83	0	34,978	PHRA 52,222
2	R01 GM12573-18 CA 11770	GOLDBERG, IRVING H MOLECULAR PHARMACOLOGY OF ANTICANCER DRUGS	HARVARD UNIVERSITY	BOSTON	MASSACHUSETTS	82	12-82	4	168,759	PC 294,984
5	R01 GM16811-13 11770	HARDMAN, JOEL G ROLE OF CYCLIC GMP: CONTROL OF CYCLIC GMP METABOLISM	VANDERBILT UNIVERSITY	NASHVILLE	TENNESSEE	82	12-82	2	97,821	MET 151,133
5	R01 GM18360-11 11870	TAYLOR, PALMER W KINETICS OF DRUG MACROMOLECULE COMPLEX FORMATION	UNIVERSITY OF CALIFORNIA SAN DIEGO LA JOLLA		CALIFORNIA	82	12-82	2	79,016	NLS 103,201
5	R01 GM20091-08 11770	LEVI, ROBERTO CARDIAC DYSFUNCTIONS CAUSED BY HISTAMINE RELEASE	CORNELL UNIVERSITY MEDICAL CENTER	NEW YORK	NEW YORK	82	05-83	2	95,593	PHRA 141,478
2	R01 GM21220-06A1 11870	WELLS, JACK N TISSUE SPECIFIC INHIBITORS OF PHOSPHODIESTERASE	VANDERBILT UNIVERSITY	NASHVILLE	TENNESSEE	82	03-83	4	65,206	PC 94,052
5	R01 GM22548-20 11870	CRAVEN, BRYAN M CHARGE DENSITY IN BARBITURATE CRYSTAL STRUCTURES	UNIVERSITY OF PITTSBURGH	PITTSBURGH	PENNSYLVANIA	81	12-82	0	35,369	BBCA 53,501
2	R01 GM22988-07 11770	GRUNEWALD, GARY L CONFORMATIONALLY DEFINED ADRENERGIC AMINES	UNIVERSITY OF KANSAS LAWRENCE	LAWRENCE	KANSAS	82	06-83	2	44,612	BNP 60,235
5	R01 GM23081-06 11870	LEGG, JOHN I BINDING OF SUBSTITUTION-INERT METAL IONS TO PROTEINS	WASHINGTON STATE UNIVERSITY	PULLMAN	WASHINGTON	82	03-83	0	52,256	BMT 75,344
5	R01 GM23197-06 11770	COOK, CLARENCE E PHARMACOLOGY OF STEROSELECTIVE RADIOIMMUNOASSAY	RESEARCH TRIANGLE INSTITUTE	RESEARCH TRIANGL	NORTH CAROLINA	81	12-82	0	60,792	PHRA 113,648
5	R01 GM24337-06 11870	TAYLOR, PALMER W PHARMACOLOGY OF MEMBRANE ASSOCIATED RECEPTORS	UNIVERSITY OF CALIFORNIA SAN DIEGO LA JOLLA		CALIFORNIA	82	06-83	2	53,235	NLS 70,856
5	R01 GM25150-05 11870	ARORA, SATISH K STRUCTURAL INVESTIGATIONS OF MODE OF ACTION OF DRUGS	UNIVERSITY OF ARIZONA	TUCSON	ARIZONA	82	02-83	0	31,999	BBCA 45,759
5	R01 GM25280-11 11470	MANNING, MAURICE DESIGN AND SYNTHESIS OF NEUROHYPOPHYSIAL PEPTIDES	MEDICAL COLLEGE OF OHIO AT TOLEDO	TOLEDO	OHIO	82	06-83	0	77,598	MCHA 120,364
2	R01 GM25819-04 11770	BRUNTON, LAURENCE L DRUG MODULATED EXTRUSION OF CELLULAR CYCLIC AMP	UNIVERSITY OF CALIFORNIA SAN DIEGO LA JOLLA		CALIFORNIA	82	11-82	2	54,823	BIO 70,241
5	R01 GM26340-03 11870	MAGUIRE, MICHAEL E ROLE OF MAGNESIUM IN CELL RESPONSE TO HORMONE	CASE WESTERN RESERVE UNIVERSITY	CLEVELAND	OHIO	82	03-83	0	66,000	PHRA 99,660
5	R01 GM26604-03 11770	LEVITZKI, ALEXANDER BETA-ADRENERGIC RECEPTOR ADENYLATE CYCLASE COMPLEX	HEBREW UNIVERSITY OF JERUSALEM	JERUSALEM	ISRAEL	81	02-83	0	43,415	BIO 43,415

T GRANT NUMBER PROG-AREA	INVESTIGATOR PROJECT TITLE	GRANTEE INSTITUTION	CITY	STATE	FY	END-DATE	FUT-YRS AVAILABLE	IRG	SUB	DOLLARS DIRECT	DOLLARS TOTAL
PHARMACOLOGY											
MOLECULAR BASIS OF DRUG ACTION											
5 R01 GM27378-03 11870	ROBISON, GEORGE A HORMONAL & NON-HORMONAL REGULATION OF ADENYLYL CYCLASE	UNIVERSITY OF TEXAS HLTH SCI CTR HOUSTON	HOUSTON	TEXAS	82	11-82	0	PHRA		68,638	94,720
5 R01 GM27800-03 11770	BOURNE, HENRY R MOLECULAR BASIS OF RECEPTOR-CYCLASE COUPLING	UNIVERSITY OF CALIFORNIA SAN FRANCISCO	SAN FRANCISCO	CALIFORNIA	82	05-83	2	PC		165,190	216,027
5 R01 GM27820-03 11770	HARDEN, T KENDALL SYNTHESIS OF BETA-ADRENERGIC RECEPTORS	UNIVERSITY OF NORTH CAROLINA CHAPEL HILL	CHAPEL HILL	NORTH CAROLINA	82	03-83	2	PHRA		74,693	104,271
5 R01 GM28310-03 11770	BOURNE, HENRY R SOMATIC GENETIC ANALYSIS OF ADENYLATE CYCLASE	UNIVERSITY OF CALIFORNIA SAN FRANCISCO	SAN FRANCISCO	CALIFORNIA	82	06-83	0	MGN		59,376	75,615
5 R01 GM28825-09 11770	FELDMAN, DAVID THE ROLE OF RECEPTORS IN GLUCOCORTICOID ACTION	STANFORD UNIVERSITY	STANFORD	CALIFORNIA	82	08-83	2	END		68,211	115,277
5 R01 GM28828-06 11770	MASAMUNE, SATORU CHELATION-ANTIBIOTICS/TREATMENT OF IRON OVERLOAD	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	CAMBRIDGE	MASSACHUSETTS	82	07-83	0	BMT		28,147	35,628
5 R01 GM28921-03 11770	WATSON, JACK T BIOCHEMICAL APPLICATIONS OF MASS SPECTROMETRY	MICHIGAN STATE UNIVERSITY	EAST LANSING	MICHIGAN	82	07-83	0	SSS		39,176	55,238
5 R01 GM29042-03 11770	ROSEN, ORA M USE OF MACROPHAGE-LIKE CELL LINES	YESHIVA UNIVERSITY	NEW YORK	NEW YORK	82	07-83	0	PTR		129,292	238,075
5 R01 GM29522-02 11770	PERKINS, JOHN P REGULATION OF B-ADRENERGIC RECEPTOR FUNCTION	UNIVERSITY OF NORTH CAROLINA CHAPEL HILL	CHAPEL HILL	NORTH CAROLINA	82	06-83	3	PHRA		69,222	93,441
5 R01 GM29536-05 11770	HARDEN, T KENDALL MUSCARINIC RECEPTOR REGULATION OF ADENYLATE CYCLASE	UNIVERSITY OF NORTH CAROLINA CHAPEL HILL	CHAPEL HILL	NORTH CAROLINA	82	03-83	1	PHRA		41,433	57,840
9 R01 GM29840-14 HL 11770	FLEMING, WILLIAM W MECHANISM OF NONSPECIFIC SUPERSENSITIVITY TO DRUGS	WEST VIRGINIA UNIVERSITY	MORGANTOWN	WEST VIRGINIA	82	12-82	3	PHRA		77,351	106,591
2 R01 GM30355-02 11770	ROSS, ELLIOTT M EFFECT OF MEMBRANE STRUCTURE ON ADENYLATE CYCLASE	UNIVERSITY OF TEXAS HLTH SCI CTR DALLAS	DALLAS	TEXAS	82	07-83	4	MBY		95,945	118,728
5 R01 GM30410-02 11770	ZIBOH, VINCENT A ROLE OF PROSTAGLANDINS IN HEMOPOIESIS	UNIVERSITY OF CALIFORNIA DAVIS	DAVIS	CALIFORNIA	82	07-83	0	HEM		49,850	68,195
1 R01 GM31155-01 HL 11770	WOLFE, BARRY B REGULATION OF MUSCARINIC CHOLINERGIC RECEPTORS	UNIVERSITY OF PENNSYLVANIA	PHILADELPHIA	PENNSYLVANIA	82	07-83	2	PHRA		61,719	92,216
1 R01 GM31206-01 11770	HOFFMAN, BRIAN B ALPHA2 RECEPTOR MEDIATED INHIBITION OF ADENYLATE CYCLASE	STANFORD UNIVERSITY	STANFORD	CALIFORNIA	82	07-83	2	PHRA		101,646	137,865
1 R01 GM31659-01 11770	LEWIS, JAMES A MUTANTS OF AN APPARENT ACETYLCHOLINE RECEPTOR	UNIVERSITY OF MISSOURI COLUMBIA	COLUMBIA	MISSOURI	82	06-83	2	GEN		38,410	47,465

TABLE-4 RESEARCH GRANTS ACTIVE AS OF 09-30-82 BY PROGRAM AREA AND GRANT NUMBER

T	GRANT NUMBER / PROG-AREA	INVESTIGATOR / PROJECT TITLE	GRANTEE INSTITUTION	CITY / STATE	FY	END-DATE	FUT-YRS AVAILABLE	IRG DOLLARS DIRECT	SUB DOLLARS TOTAL
PHARMACOLOGY									
		MOLECULAR BASIS OF DRUG ACTION							
**	0	*CENTERS (P50)						0	0
**	0	PROGRAM PROJECTS (P01)						0	0
**	32	REGULAR PROJECTS (R01)						2,229,771	3,247,285
**	0	ALL OTHERS (P30, P41, R13, R23, R25)						0	0
**	32	TOTALS						2,229,771	3,247,285

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T GRANT NUMBER / PROG-AREA	INVESTIGATOR / PROJECT TITLE	GRANTEE INSTITUTION	CITY	STATE	FY	END-DATE	FUT-YRS AVAILABLE	DOLLARS DIRECT	DOLLARS TOTAL	IRG SUB
PHARMACOLOGY										
MODIFIERS OF DRUG ACTION										
5 R01 GM22209-08 11880	BLASCHKE, TERRENCE F KINETICS OF DRUG-DRUG AND DRUG-DISEASE INTERACTIONS	STANFORD UNIVERSITY	STANFORD	CALIFORNIA	82	08-83	1	71,092	120,145	PHRA
5 R01 GM24211-06 11880	JUSKO, WILLIAM J AGE AND DISEASE IN DRUG DISPOSITION	STATE UNIVERSITY OF NEW YORK AT BUFFALO	BUFFALO	NEW YORK	82	06-83	1	77,488	99,064	PHRA
5 R01 GM24707-03 11880	CORREIA, MARIA A REGULATION OF INTESTINAL METABOLISM OF XENOBIOTICS	UNIVERSITY OF CALIFORNIA SAN FRANCISCO	SAN FRANCISCO	CALIFORNIA	81	11-82	0	55,695	72,960	PHRA
5 R01 GM24781-05 11780	MITCHELL, ALLEN A INTENSIVE DRUG SURVEILLANCE IN HOSPITALIZED CHILDREN	CHILDREN'S HOSPITAL MEDICAL CENTER	BOSTON	MASSACHUSETTS	82	04-83	0	295,302	448,855	EDC
5 R01 GM25027-05 11780	CHUNG, LELAND W NEONATAL IMPRINTING MECHANISMS AND DEVELOPMENT	UNIVERSITY OF COLORADO AT BOULDER	BOULDER	COLORADO	82	07-83	1	66,739	93,368	PHRA
5 R01 GM25807-03 11880	OIE, SVEIN DRUG DISPOSITION IN RENAL FAILURE PATIENTS	UNIVERSITY OF CALIFORNIA SAN FRANCISCO	SAN FRANCISCO	CALIFORNIA	81	11-82	0	44,193	57,893	PHRA
5 R01 GM26222-03 11880	SHAPIRO, BERNARD H DEVELOPMENTAL ORGANIZERS OF DRUG METABOLISM	UNIVERSITY OF PENNSYLVANIA	PHILADELPHIA	PENNSYLVANIA	81	03-83	0	57,190	94,364	PHRA
2 P01 GM26414-04 11780	WILSON, CAROL M THE GENETIC CONTROL OF RENIN ACTIVITY	UNIVERSITY OF TEXAS HLTH SCI CTR DALLAS	DALLAS	TEXAS	82	03-83	2	75,374	101,404	MGN
5 R01 GM26480-03 11880	RIKANS, LORA E VITAMIN C DEFICIENCY AND MICROSOMAL ENZYMES	UNIVERSITY OF OKLAHOMA HLTH SCIENCES CTR	OKLAHOMA CITY	OKLAHOMA	82	03-83	0	28,963	40,548	MTN
5 R01 GM26551-03 11380	BENET, LESLIE Z PHARMACOKINETICS IN DISEASE STATES	UNIVERSITY OF CALIFORNIA SAN FRANCISCO	SAN FRANCISCO	CALIFORNIA	81	03-83	0	86,452	113,252	SSS
2 R01 GM26556-04 11780	TOZER, THOMAS N FACTORS INFLUENCING SATURABLE FIRST-PASS METABOLISM	UNIVERSITY OF CALIFORNIA SAN FRANCISCO	SAN FRANCISCO	CALIFORNIA	82	03-83	3	91,734	106,064	PHRA
5 R01 GM27801-02 11780	LINSCHEER, WILLEM G PROTECTION OF PROPYLTHIOURACIL AGAINST TOXIC HEPATITIS	UPSTATE MEDICAL CENTER	SYRACUSE	NEW YORK	82	12-82	1	86,782	103,201	PHRA
5 R01 GM27811-03 11880	VAN DER HOEVEN, THEODORE A ENDOCRINE CONTROL OF LIVER MICROSOMAL CYTOCHROME P-450	ALBANY MEDICAL COLLEGE	ALBANY	NEW YORK	82	08-83	0	34,544	54,220	BIO
5 R01 GM28072-03 11880	HOLFORD, NICHOLAS H CLINICAL PHARMACODYNAMICS--DIGOXIN AND QUINIDINE	UNIVERSITY OF CALIFORNIA SAN FRANCISCO	SAN FRANCISCO	CALIFORNIA	82	06-83	0	57,861	73,888	SSS
5 R01 GM28157-03 11780	WEINSHILBOUM, RICHARD M INHERITED VARIATIONS IN DRUG METABOLIZING ENZYMES	MAYO FOUNDATION	ROCHESTER	MINNESOTA	82	06-83	2	73,781	95,530	PHRA
5 R01 GM28171-02 11780	MANNERING, GILBERT J EFFECTS OF INTERFERON ON DRUG METABOLIZING SYSTEMS	UNIVERSITY OF MINNESOTA OF MNPLS-ST PAUL	MINNEAPOLIS	MINNESOTA	82	08-83	1	63,223	87,880	PHRA

TABLE-4 RESEARCH GRANTS ACTIVE AS OF 09-30-82 BY PROGRAM AREA AND GRANT NUMBER

T	GRANT NUMBER / PROG-AREA	INVESTIGATOR / PROJECT TITLE	GRANTEE INSTITUTION	CITY	STATE	FY	END-DATE	FUT-YRS AVAILABLE DIRECT	IRG SUB DOLLARS TOTAL
PHARMACOLOGY									
		MODIFIERS OF DRUG ACTION							
5	R01 GM28423-03 11880	OIE, SVEIN DISPOSITION AND ABSORPTION IN DISEASE STATES	UNIVERSITY OF CALIFORNIA SAN FRANCISCO	SAN FRANCISCO	CALIFORNIA	82	07-83	0 69,612	SSS 88,368
1	R01 GM29571-01 HD 11780	MORISHIMA, HISAYO O DRUG RESPONSES IN FETAL IMMATURITY AND/OR ASPHYXIA	COLUMBIA UNIVERSITY	NEW YORK	NEW YORK	82	03-83	2 104,891	PHRA 173,229
1	R01 GM30546-01 AM 11880	JOLLOW, DAVID J ACETAMINOPHEN TOXICITY: EFFECTS OF DIABETES AND DIET	MEDICAL UNIVERSITY OF SOUTH CAROLINA	CHARLESTON	SOUTH CAROLINA	82	04-83	2 64,266	PHRA 83,289

**	0	*CENTERS (P50)	0	0
**	0	PROGRAM PROJECTS (P01)	0	0
**	19	REGULAR PROJECTS (R01)	1,505,182	2,107,522
**	0	ALL OTHERS (P30, P41, R13, R23, R25)	0	0
**	19	TOTALS	1,505,182	2,107,522

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PHARMACOLOGY									
	DRUG TOXICITY, INCLUDING VENOM STUDIES								
2	R01 GM15591-15 11790	TU, ANTHONY T HEMORRHAGIC AND NECROTIC TOXINS IN SNAKE VENOMS	COLORADO STATE UNIVERSITY	FORT COLLINS	82 COLORADO	05-83	4	55,060	TOX 74,221
5	R01 GM19172-11 11790	TU, ANTHONY T SEA SNAKE VENOMS AND TOXINS	COLORADO STATE UNIVERSITY	FORT COLLINS	82 COLORADO	08-83	0	47,795	TOX 64,943
2	R01 GM19420-11 11790	TEPHLY, THOMAS R METHANOL POISONING	UNIVERSITY OF IOWA	IOWA CITY	82 IOWA	11-82	4	88,291	TOX 121,462
5	R01 GM24173-06 11790	GEREN, COLLIS R VENOM COMPONENTS: ISOLATION, CHARACTERIZATION AND USE	UNIVERSITY OF ARKANSAS AT FAYETTEVILLE	FAYETTEVILLE	82 ARKANSAS	06-83	0	41,897	TOX 57,399
5	R01 GM24979-05 11790	HOSTETLER, KARL Y PATHOGENESIS OF DRUG-INDUCED LIPIDOSIS	UNIVERSITY OF CALIFORNIA SAN DIEGO	LA JOLLA	82 CALIFORNIA	03-83	3	70,571	PC 84,473
5	R01 GM25329-04 11790	CLARKSON, THOMAS W ANTIDOTES TO HEAVY METAL POISONING	UNIVERSITY OF ROCHESTER	ROCHESTER	82 NEW YORK	12-82	3	98,146	TOX 130,870
2	R01 GM25418-04A1 11890	NELSON, SIDNEY D ALTERATION OF METABOLISM BY STRUCTURAL MODIFICATION	UNIVERSITY OF WASHINGTON	SEATTLE	82 WASHINGTON	03-83	2	55,666	PHRA 73,079
5	R01 GM25781-03 11890	JOLLOW, DAVID J ACETAMINOPHEN-INDUCED LIVER NECROSIS	MEDICAL UNIVERSITY OF SOUTH CAROLINA	CHARLESTON	81 SOUTH CAROLINA	11-82	0	89,337	PHRA 117,031
2	R01 GM25888-04A1 AM 11790	O'BRIEN, THOMAS W CHLORAMPHENICOL-INDUCED APLASTIC ANEMIA	UNIVERSITY OF FLORIDA	GAINESVILLE	82 FLORIDA	07-83	2	58,236	EH 85,607
5	R01 GM26283-03 11890	KISSINGER, PETER T N-ACETYL-P-QUINONEIMINE IN ACETAMINOPHEN TOXICITY	PURDUE UNIVERSITY WEST LAFAYETTE	WEST LAFAYETTE	81 INDIANA	09-82	0	47,613	TOX 73,167
5	R01 GM26366-03 11890	WILEY, ROBERT A FURAN LUNG TOXINS: ORGAN SPECIFICITY AND METABOLISM	UNIVERSITY OF KANSAS LAWRENCE	LAWRENCE	81 KANSAS	11-82	0	37,509	TOX 52,380
5	R01 GM26775-03 11790	KOECHEL, DANIEL A RENAL NECROSIS INDUCED BY CHEMICALS	MEDICAL COLLEGE OF OHIO AT TOLEDO	TOLEDO	81 OHIO	06-83	0	45,598	TOX 63,345
5	R01 GM26902-03 11890	LIETMAN, PAUL S ANTIBIOTIC TOXICITY: BIOCHEMICAL & CLINICAL PHARMACOLOGY	JOHNS HOPKINS UNIVERSITY	BALTIMORE	81 MARYLAND	06-83	0	110,255	SSS 165,383
5	R01 GM29277-02 11890	RUSSELL, FINDLAY E VENOMS OF ANIMALS OF UNITED STATES AND YUGOSLAVIA	UNIVERSITY OF ARIZONA	TUCSON	82 ARIZONA	12-82	1	54,530	TOX 77,440
1	R01 GM31289-01 11790	FOX, JAY W CHARACTERIZATION & INHIBITION OF SNAKE HEMORRHAGIC TOXIN	UNIVERSITY OF VIRGINIA CHARLOTTESVILLE	CHARLOTTESVILLE	82 VIRGINIA	07-83	2	35,900	TOX 44,990
7	R01 GM31780-01 11890	SPEEG, KERMIT V HEPATIC, CEREBRAL AND RENAL SIDE EFFECTS OF CIMETIDINE	UNIVERSITY OF TEXAS HLTH SCI CTR SAN ANT	SAN ANTONIO	82 TEXAS	01-83	1	58,163	PHRA 79,102

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PHARMACOLOGY								
		DRUG TOXICITY, INCLUDING VENOM STUDIES						
							0	0
							0	0
**	0	*CENTERS (P50)					994,567	1,364,892
**	0	PROGRAM PROJECTS (P01)					0	0
**	16	REGULAR PROJECTS (R01)					994,567	1,364,892
**	0	ALL OTHERS (P30, P41, R13, R23, R25)						
**	16	TOTALS						
SUMMARY OF PHARMACOLOGY								
***	6	*CENTERS (P50)					2,515,020	3,574,770
***	5	PROGRAM PROJECTS (P01)					821,148	1,201,993
***	110	REGULAR PROJECTS (R01)					7,321,632	10,324,947
***	0	ALL OTHERS (P30, P41, R13, R23, R25)					0	0
***	121	TOTALS					10,657,800	15,101,710

TABLE-4 RESEARCH GRANTS ACTIVE AS OF 09-30-82 BY PROGRAM AREA AND GRANT NUMBER

T	GRANT NUMBER / PROG-AREA	INVESTIGATOR / PROJECT TITLE	GRANTEE INSTITUTION	CITY	FY / STATE	END-DATE	FUT-YRS AVAILABLE	DOLLARS DIRECT	IRG SUB TOTAL
BIORELATED CHEMICAL PROCESSES PROGRAM PROJECTS									
2	P01 GM22365-06A1 / 11900	LONG, JOHN P / STRUCTURE ACTIVITY STUDIES OF PHARMACOLOGIC AGENTS	UNIVERSITY OF IOWA	IOWA CITY	82 / IOWA	04-83	2	270,000	PTR 363,480
2	P01 GM24483-04 / 11900	MARSHALL, GARLAND R / COMPUTER-AIDED DRUG DESIGN	WASHINGTON UNIVERSITY	SAINT LOUIS	82 / MISSOURI	11-82	2	345,000	PTR 509,826
**	0	*CENTERS (P50)						0	0
**	2	PROGRAM PROJECTS (P01)						615,000	873,306
**	0	REGULAR PROJECTS (R01)						0	0
**	0	ALL OTHERS (P30, P41, R13, R23, R25)						0	0
**	2	TOTALS						615,000	873,306

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T	GRANT NUMBER / PROG-AREA	INVESTIGATOR / PROJECT TITLE	GRANTEE INSTITUTION	CITY	FY / STATE	END-DATE	FUT-YRS AVAILABLE	IRG / DIRECT	SUB / TOTAL
	BIORELATED CHEMICAL PROCESSES CHEMISTRY OF NATURAL MATERIALS								
2	R01 GM02907-31 11910	LI, CHOH H ACTH AND RELATED PEPTIDES	UNIVERSITY OF CALIFORNIA	SAN FRANCISCO SAN FRANCISCO	82 CALIFORNIA	02-83	4	119,852	BCE 157,006
5	R01 GM05147-26 11910	STORK, GILBERT SYNTHESIS OF BIOLOGICALLY ACTIVE NATURAL PRODUCTS	COLUMBIA UNIVERSITY	NEW YORK	82 NEW YORK	08-83	2	129,215	MCHA 219,278
5	R01 GM05829-24 11910	LEONARD, NELSON J NUCLEOSIDES, NUCLEIC ACIDS, AND CELL DIVISION FACTORS	UNIVERSITY OF ILLINOIS	URBANA-CHAMPAIGN URBANA	82 ILLINOIS	11-82	2	112,384	MCHA 158,763
5	R01 GM06304-19 11910	NICKON, ALEX DOMED FUNCTIONAL GROUPS	JOHNS HOPKINS UNIVERSITY	BALTIMORE	81 MARYLAND	08-83	0	68,866	MCHA 102,524
2	R01 GM06840-24 11910	DJERASSI, CARL MARINE CHEMISTRY WITH SPECIAL EMPHASIS ON STEROIDS	STANFORD UNIVERSITY	STANFORD	82 CALIFORNIA	04-83	4	195,682	BNP 300,478
2	R01 GM09686-21 11910	BUCHI, GEORGE H THE CHEMISTRY OF NATURAL PRODUCTS	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	CAMBRIDGE	82 MASSACHUSETTS	03-83	4	160,290	BNP 235,634
5	R01 GM10421-18 11910	VAN TAMELEN, EUGENE E BIOORGANIC CHEMISTRY OF STEROIDS AND TERPENOIDS	STANFORD UNIVERSITY	STANFORD	82 CALIFORNIA	07-83	0	40,148	MCHA 63,434
5	R01 GM11976-17 11910	HORTON, DEREK SYNTHESIS OF BIOLOGICALLY IMPORTANT CARBOHYDRATES	OHIO STATE UNIVERSITY	COLUMBUS	82 OHIO	09-83	0	80,213	MCHA 109,522
5	R01 GM12672-12 11910	BURGESS, EDWARD M THE CHEMISTRY OF NEW FUNCTIONAL GROUPS IN ENZYMES	GEORGIA INSTITUTE OF TECHNOLOGY	ATLANTA	82 GEORGIA	02-83	0	60,100	MCHA 93,155
2	R01 GM12848-17 11910	HARRIS, THOMAS M TETRACYCLINES AND RELATED PHENOLIC NATURAL PRODUCTS	VANDERBILT UNIVERSITY	NASHVILLE	82 TENNESSEE	12-82	3	57,316	BNP 87,463
5	R01 GM13246-25 11910	LEETE, EDWARD METABOLISM OF NATURAL PRODUCTS OF MEDICINAL INTEREST	UNIVERSITY OF MINNESOTA OF MNPLS-ST PAUL	MINNEAPOLIS	82 MINNESOTA	12-82	1	68,602	MCHA 93,299
3	R01 GM13246-25S1 11910	LEETE, EDWARD METABOLISM OF NATURAL PRODUCTS OF MEDICINAL INTEREST	UNIVERSITY OF MINNESOTA OF MNPLS-ST PAUL	MINNEAPOLIS	82 MINNESOTA	12-82	0	27,000	BNP 27,000
2	R01 GM18278-12 11910	KOLATTUKUDY, P E BIOCHEMISTRY OF NATURAL PRODUCTS	WASHINGTON STATE UNIVERSITY	PULLMAN	82 WASHINGTON	12-82	4	159,000	PC 226,230
5	R01 GM19566-12 11910	STEVENSON, ROBERT BISARYLPROPANOIDS OF CHEMICAL AND MEDICINAL INTEREST	BRANDEIS UNIVERSITY	WALTHAM	82 MASSACHUSETTS	11-82	0	49,889	MCHA 80,820
2	R01 GM20053-18 11910	BENTLEY, RONALD BIOSYNTHESIS OF VITAMIN K	UNIVERSITY OF PITTSBURGH	PITTSBURGH	82 PENNSYLVANIA	08-83	4	98,445	MBC 138,690
2	R01 GM21249-06A1 11910	SALOMON, ROBERT G PREPROSTAGLANDIN ENDOPEROXIDES	CASE WESTERN RESERVE UNIVERSITY	CLEVELAND	82 OHIO	03-83	2	139,424	BNP 179,267

T	GRANT NUMBER / PROG-AREA	INVESTIGATOR / PROJECT TITLE	GRANTEE INSTITUTION	CITY	STATE	FY	END-DATE	FUT-YRS AVAILABLE	IRG SUB DOLLARS DIRECT	TOTAL
	BIORELATED CHEMICAL PROCESSES CHEMISTRY OF NATURAL MATERIALS									
5	R01 GM22172-08 11910	CANE, DAVID E BIOSYNTHESIS OF ANTIBIOTIC NATURAL PRODUCTS	BROWN UNIVERSITY	PROVIDENCE	RHODE ISLAND	82	07-83	0	66,700	BNP 109,405
5	R01 GM22737-04 11910	OLIVERA, BALDOMERO M A BIOCHEMICAL CHARACTERIZATION OF CONUS TOXINS	UNIVERSITY OF UTAH	SALT LAKE CITY	UTAH	81	03-83	0	56,555	PC 82,948
5	R01 GM22744-07 11910	GURIN, SAMUEL BIOSYNTHESIS AND FUNCTION OF PYRIDINE CARBOXYLIC ACIDS	UNIVERSITY OF FLORIDA	GAINESVILLE	FLORIDA	82	03-83	0	23,597	BIO 30,908
5	R01 GM23593-06 11910	HARRIS, THOMAS M VANCOMYCIN, RISTOCETIN AND RELATED ANTIBIOTICS	VANDERBILT UNIVERSITY	NASHVILLE	TENNESSEE	82	06-83	1	61,546	MCHA 99,089
5	R01 GM24054-05 11910	GANEM, BRUCE SYNTHESIS AND BIOSYNTHESIS IN THE SHIKIMATE PATHWAY	CORNELL UNIVERSITY ITHACA	ITHACA	NEW YORK	82	12-82	1	71,020	BNP 104,089
5	R01 GM24254-06 11910	LAROCK, RICHARD C SYNTHESIS OF BIOLOGICALLY ACTIVE HETEROCYCLES	IOWA STATE UNIVERSITY OF SCIENCE & TECH	AMES	IOWA	82	08-83	0	55,626	BMT 74,539
2	R01 GM24425-04 11910	SHIMIZU, YUZURU BIOSYNTHESIS OF MARINE NATURAL PRODUCTS	UNIVERSITY OF RHODE ISLAND	KINGSTON	RHODE ISLAND	82	06-83	2	55,591	BNP 75,048
5	R01 GM25303-05 11910	TUFARIELLO, JOSEPH J ALKALOID SYNTHESIS	STATE UNIVERSITY OF NEW YORK AT BUFFALO	BUFFALO	NEW YORK	82	08-83	1	76,358	MCHA 112,377
2	R01 GM25521-04 11910	POULTER, C DALE STUDIES OF STEROL BIOSYNTHESIS	UNIVERSITY OF UTAH	SALT LAKE CITY	UTAH	82	03-83	2	70,798	BNP 99,417
5	R01 GM25799-03 11910	HUTCHINSON, C RICHARD STEREOCHEMISTRY OF POLYKETIDE ANTIBIOTIC BIOSYNTHESIS	UNIVERSITY OF WISCONSIN MADISON	MADISON	WISCONSIN	81	12-82	0	19,628	MCHA 27,269
5	R01 GM25816-03 11910	RAUCHER, STANLEY INDOLE ALKALOID SYNTHESIS VIA CLAISEN REARRANGEMENT	UNIVERSITY OF WASHINGTON	SEATTLE	WASHINGTON	82	03-83	0	39,809	MCHA 53,304
2	R01 GM25950-04 11910	DANHEISER, RICK L SYNTHETIC APPROACHES TO CYCLIC NATURAL PRODUCTS	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	CAMBRIDGE	MASSACHUSETTS	82	11-82	2	81,825	MCHA 106,533
2	R01 GM25996-04 11910	GOULD, STEVEN J BIOSYNTHETIC STUDIES USING 15N-13C CNMR SPECTROSCOPY	UNIVERSITY OF CONNECTICUT STORRS	STORRS	CONNECTICUT	82	11-82	2	62,317	BNP 94,395
2	R01 GM26111-07 11910	EVANS, DAVID A ANTICANCER AND NEUROTOXIC ALKALOID SYNTHESIS	CALIFORNIA INSTITUTE OF TECHNOLOGY	PASADENA	CALIFORNIA	82	03-83	3	93,568	MCHA 138,481
5	R01 GM26553-03 11910	MITSCHER, LESTER A VERSATILE SYNTHESIS OF OPTICALLY PURE PROSTAGLANDINS	UNIVERSITY OF KANSAS LAWRENCE	LAWRENCE	KANSAS	81	12-82	0	46,398	MCHA 64,807
5	R01 GM26568-05 11910	SCHULTZ, ARTHUR G SYNTHESIS OF ASPIDOSPERMA AND DENDROBINE ALKALOIDS	RENSSELAER POLYTECHNIC INSTITUTE	TROY	NEW YORK	82	08-83	1	68,508	MCHA 108,243

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	BIORELATED CHEMICAL PROCESSES CHEMISTRY OF NATURAL MATERIALS								
5	R01 GM26569-04 11910	PARRY, RONALD J BIOSYNTHESIS OF CYCLOPENTANOIDS	RICE UNIVERSITY	HOUSTON	82 TEXAS	11-82	1	40,081	BNP 54,911
5	R01 GM26574-04 11910	HAUSER, FRANK M STEREOSPECIFIC SYNTHESES OF SELECTED AMINO SUGARS	OREGON GRADUATE CTR STUDY AND RESEARCH	BEAVERTON	82 OREGON	03-83	1	38,140	MCHA 61,162
2	R01 GM26879-04 11910	NICOLAOU, KYRIACOS C "TOTAL SYNTHESIS OF MACROLIDE ANTIBIOTICS"	UNIVERSITY OF PENNSYLVANIA	PHILADELPHIA	82 PENNSYLVANIA	08-83	1	80,001	MCHA 128,102
5	R01 GM27058-03 11910	TANABE, MASATO STEREOSPECIFIC SYNTHESIS OF STEROL SIDE CHAINS	SRI INTERNATIONAL	MENLO PARK	81 CALIFORNIA	02-83	0	46,827	SSS 89,694
5	R01 GM27320-23 11910	DAUBEN, WILLIAM G MODIFIED STEROID AND POLYTERPENOID ANTITUMOR AGENTS	UNIVERSITY OF CALIFORNIA BERKELEY	BERKELEY	82 CALIFORNIA	11-82	2	57,879	MCHA 75,006
5	R01 GM27328-03 11910	GODLESKI, STEPHEN A SYNTHESIS OF SPIROCYCLIC NATURAL PRODUCTS	UNIVERSITY OF ROCHESTER	ROCHESTER	82 NEW YORK	11-82	0	34,997	BMT 60,895
5	R01 GM27617-03 11910	ANDERSON, JOHN A CYTOCHROME P-450 IN ERGOT ALKALOID BIOSYNTHESIS	TEXAS TECH UNIVERSITY	LUBBOCK	82 TEXAS	03-83	0	31,925	BIO 40,545
5	R01 GM27647-03 11910	HART, DAVID J SYNTHESIS OF BIOLOGICALLY ACTIVE ALKALOIDS	OHIO STATE UNIVERSITY	COLUMBUS	82 OHIO	03-83	0	45,989	MCHA 61,895
5	R01 GM28056-03 11910	WUTS, PETER G ALLYLBORANES IN THE SYNTHESIS OF IONOMYCIN AND ANALOGS	UNIVERSITY OF MICHIGAN AT ANN ARBOR	ANN ARBOR	82 MICHIGAN	06-83	0	47,568	MCHA 75,157
5	R01 GM28122-03 11910	STEVENS, ROBERT V THE SYNTHESIS OF ALKALOIDS	UNIVERSITY OF CALIFORNIA LOS ANGELES	LOS ANGELES	82 CALIFORNIA	06-83	0	70,083	MCHA 97,205
5	R01 GM28128-03 11910	LIPSHUTZ, BRUCE H NOVEL APPROACHES TO THE CYCLOPEPTIDE ALKALOIDS	UNIVERSITY OF CALIFORNIA SANTA BARBARA	SANTA BARBARA	82 CALIFORNIA	07-83	0	35,314	MCHA 48,400
5	R01 GM28321-03 11910	BURKE, STEVEN D ANTIBIOTIC, PROSTANOID, AND STEROID TOTAL SYNTHESIS	UNIVERSITY OF SOUTH CAROLINA AT COLUMBIA	COLUMBIA	82 SOUTH CAROLINA	06-83	0	44,933	MCHA 65,198
5	R01 GM28352-22 11910	DJERASSI, CARL MASS SPECTROMETRY IN ORGANIC AND BIOCHEMISTRY	STANFORD UNIVERSITY	STANFORD	82 CALIFORNIA	02-83	1	119,227	SSS 188,379
5	R01 GM28468-03 11910	PAQUETTE, LEO A SYNTHETIC ELABORATION OF POLYQUINANE NATURAL PRODUCTS	OHIO STATE UNIVERSITY	COLUMBUS	82 OHIO	06-83	0	55,073	MCHA 75,450
5	R01 GM28569-02 11910	MC MURRY, JOHN E ALKALOID SYNTHESIS VIA AZIRIDINIUM IONS	CORNELL UNIVERSITY ITHACA	ITHACA	82 NEW YORK	11-82	1	51,306	MCHA 80,026
5	R01 GM28663-02 11910	FUNK, RAYMOND L NEW CYCLIZATION METHODS FOR NATURAL PRODUCT SYNTHESIS	UNIVERSITY OF NEBRASKA LINCOLN	LINCOLN	82 NEBRASKA	11-82	2	48,760	BNP 66,795

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BIORELATED CHEMICAL PROCESSES												
	CHEMISTRY OF NATURAL MATERIALS											
5	R01 GM28754-09 11910	SHIMIZU, YUZURU DELETERIOUS MICROALGAL TOXINS	UNIVERSITY OF RHODE ISLAND	KINGSTON	RHODE ISLAND	82	08-83	0			60,933	MCHA 82,260
5	R01 GM28790-02 11910	WEINREB, STEVEN M SYNTHESIS OF SECURINEGA ALKALOIDS	PENNSYLVANIA STATE UNIVERSITY UNIV PARK	UNIVERSITY PARK	PENNSYLVANIA	82	03-83	1			61,588	MCHA 80,568
5	R01 GM28849-02 11910	HEATHCOCK, CLAYTON H STEREOSELECTIVE SYNTHESIS OF POLYETHER IONOPHORES	UNIVERSITY OF CALIFORNIA BERKELEY	BERKELEY	CALIFORNIA	82	02-83	2			64,137	BNP 84,019
5	R01 GM28961-02 11910	KECK, GARY E CHIRAL APPROACHES TO ANTIBIOTIC SYNTHESIS	UNIVERSITY OF UTAH	SALT LAKE CITY	UTAH	82	05-83	1			42,593	MCHA 61,760
5	R01 GM28968-02 11910	KELLY, T ROSS SYNTHESIS OF STREPTOLYDIGIN AND ITS CONGENERS	BOSTON COLLEGE	CHESTNUT HILL	MASSACHUSETTS	82	03-83	1			78,828	MCHA 115,525
5	R01 GM29016-02 11910	MARIANO, PATRICK S MOLECULAR REARRANGEMENTS IN NATURAL PRODUCT SYNTHESIS	UNIVERSITY OF MARYLAND COLLEGE PK CAMPUS	COLLEGE PARK	MARYLAND	82	03-83	1			40,214	MCHA 54,164
5	R01 GM29028-02 11910	SMITH, AMOS B, III THE MILBEMYCINS: POTENTIAL ANTILEUKEMIC AGENTS	UNIVERSITY OF PENNSYLVANIA	PHILADELPHIA	PENNSYLVANIA	82	03-83	1			56,572	MCHA 88,469
5	R01 GM29073-02 11910	SALOMON, ROBERT G TOTAL SYNTHESIS OF K76: COMPLEMENT CASCADE INHIBITORS	CASE WESTERN RESERVE UNIVERSITY	CLEVELAND	OHIO	82	03-83	1			32,510	MCHA 48,580
1	R01 GM29077-01A1 AI 11910	HOYE, THOMAS R ANTIBIOTIC SYNTHESIS	UNIVERSITY OF MINNESOTA OF MNPLS-ST PAUL	MINNEAPOLIS	MINNESOTA	82	01-83	2			49,210	MCHA 64,046
5	R01 GM29195-05 11910	WHITESELL, JAMES K THE TOTAL SYNTHESIS OF SARRACENIN	UNIVERSITY OF TEXAS AUSTIN	AUSTIN	TEXAS	82	03-83	1			46,216	MCHA 62,392
5	R01 GM29232-03 11910	WENKERT, ERNEST ALKALOID SYNTHESIS	UNIVERSITY OF CALIFORNIA SAN DIEGO	LA JOLLA	CALIFORNIA	82	08-83	1			105,525	MCHA 140,454
5	R01 GM29468-09 11910	ZIEGLER, FREDERICK E SYNTHETIC STUDIES OF CYTOTOXIC NATURAL PRODUCTS	YALE UNIVERSITY	NEW HAVEN	CONNECTICUT	82	08-83	2			90,566	BNP 152,151
5	R01 GM29475-03 11910	MARSHALL, JAMES A SYNTHESIS OF TUMOR INHIBITORY COMPOUNDS	UNIVERSITY OF SOUTH CAROLINA AT COLUMBIA	COLUMBIA	SOUTH CAROLINA	82	08-83	1			64,778	MCHA 93,091
5	R01 GM29540-02 11910	JACOBI, PETER A A SYNTHETIC APPROACH TO SAXITOXIN	WESLEYAN UNIVERSITY	MIDDLETOWN	CONNECTICUT	82	06-83	1			48,241	MCHA 67,317
5	R01 GM29784-14 11910	FLOSS, HEINZ G BIOSYNTHESIS OF ERGOT ALKALOIDS	PURDUE UNIVERSITY WEST LAFAYETTE	WEST LAFAYETTE	INDIANA	82	08-83	1			74,229	BNP 103,921
1	R01 GM29815-01A1 HL 11910	HEATHCOCK, CLAYTON H TOTAL SYNTHESIS OF COMPACTIN AND MEVINOLIN	UNIVERSITY OF CALIFORNIA BERKELEY	BERKELEY	CALIFORNIA	82	08-83	2			60,345	BNP 83,828

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BIORELATED CHEMICAL PROCESSES									
		CHEMISTRY OF NATURAL MATERIALS							
1	R01 GM29972-01A1 CA 11910	GILBERT, JOHN C DEVELOPMENT OF A BIOMIMETIC APPROACH TO TRICHOTHECENES	UNIVERSITY OF TEXAS AUSTIN	AUSTIN	82 TEXAS	07-83	2	61,470	MCHA 78,697
1	R01 GM30073-01 11910	CHAMBERLIN, A RICHARD SYNTHESIS OF ALKALOIDS BY POLYENE CYCLIZATION	UNIVERSITY OF CALIFORNIA IRVINE	IRVINE	82 CALIFORNIA	01-83	2	44,832	MCHA 58,435
1	R01 GM30255-01A1 11910	COMINS, DANIEL L ALKALOID SYNTHESIS VIA 2-ALKENYL-1,2-DIHYDROPYRIDINES	UTAH STATE UNIVERSITY	LOGAN	82 UTAH	07-83	2	29,828	MCHA 39,393
1	R01 GM30343-01 CA 11910	STERNBACH, DANIEL D CHIRAL SYNTHESIS: METHYLENOMYCIN & PEDERIN	DUKE UNIVERSITY	DURHAM	82 NORTH CAROLINA	01-83	2	63,098	MCHA 86,098
1	R01 GM30345-01 CA 11910	BOECKMAN, ROBERT K, JR SYNTHESIS OF MEDIUM RING ANTITUMOR SUBSTANCES	UNIVERSITY OF ROCHESTER	ROCHESTER	82 NEW YORK	08-83	3	43,555	BNP 72,826
1	R01 GM30350-01 CA 11910	COLLUM, DAVID B THE SYNTHESIS OF ANTITUMOR AGENTS	CORNELL UNIVERSITY ITHACA	ITHACA	82 NEW YORK	01-83	3	65,150	MCHA 88,033
5	R01 GM30354-02 11910	SNIDER, BARRY B PSEUDOMONIC ACID A TOTAL SYNTHESIS VIA NEIGHBORING GROUP	BRANDEIS UNIVERSITY	WALTHAM	82 MASSACHUSETTS	08-83	1	44,594	MCHA 80,269
1	R01 GM30373-01 11910	PEARSON, ANTHONY J STEROID, C-NOR-D-HOMOSTEROID, AND APHIDICOLIN SYNTHESES	CASE WESTERN RESERVE UNIVERSITY	CLEVELAND	82 OHIO	07-83	2	88,312	MCHA 110,196
1	R01 GM30390-01 11910	TIUS, MARCUS A TOTAL SYNTHESIS OF (-) - ASPERDIOL	UNIVERSITY OF HAWAII AT MANOA	HONOLULU	82 HAWAII	05-83	2	41,347	MCHA 53,857
9	R01 GM30759-08 CA 11910	BARTLETT, PAUL A SYNTHESIS OF MACROCYCLIC NATURAL PRODUCTS	UNIVERSITY OF CALIFORNIA BERKELEY	BERKELEY	82 CALIFORNIA	03-83	4	81,738	MCHA 102,489
1	R01 GM30771-01 CA 11910	RIGBY, JAMES H TOTAL SYNTHESIS OF SOME CYTOTOXIC GUAIANOLIDES	WAYNE STATE UNIVERSITY	DETROIT	82 MICHIGAN	04-83	2	43,670	MCHA 59,356
9	R01 GM30932-07 CA 11910	CUSHMAN, MARK S NEW ALKALOID SYNTHESES	PURDUE UNIVERSITY WEST LAFAYETTE	WEST LAFAYETTE	82 INDIANA	06-83	2	54,316	MCHA 74,966
1	R01 GM31051-01 11910	WALBA, DAVID M TOTAL SYNTHESES OF ZOAPATANOL AND EUNICELLINS	UNIVERSITY OF COLORADO AT BOULDER	BOULDER	82 COLORADO	07-83	2	42,999	MCHA 58,131
9	R01 GM31256-06 CA 11910	SCHLESSINGER, RICHARD H TOTAL SYNTHESIS OF QUASSINOIDS	UNIVERSITY OF ROCHESTER	ROCHESTER	82 NEW YORK	03-83	2	92,993	MCHA 141,946
9	R01 GM31352-04 AI 11910	SEMMELHACK, MARTIN F NATURAL PRODUCT SYNTHESES	PRINCETON UNIVERSITY	PRINCETON	82 NEW JERSEY	03-83	2	75,924	MCHA 124,515
7	R01 GM31600-01 11910	SCOTT, A IAN ANTITUMOR ALKALOIDS BIOSYNTHESIS AND BIOGENETIC SYNTHESI	TEXAS AGRI AND MECH UNIV COLLEGE STATION	COLLEGE STATION	82 TEXAS	03-83	3	49,328	BNP 63,358

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BIORELATED CHEMICAL PROCESSES								
CHEMISTRY OF NATURAL MATERIALS								
**	0	*CENTERS (P50)					0	0
**	0	PROGRAM PROJECTS (P01)					0	0
**	80	REGULAR PROJECTS (R01)					5,264,012	7,597,345
**	0	ALL OTHERS (P30, P41, R13, R23, R25)					0	0
**	80	TOTALS					5,264,012	7,597,345

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BIORELATED CHEMICAL PROCESSES									
		CHEMICAL PROCESSES OF BIOMEDICAL SIGNIFICANCE							
5	R01 GM04712-25 11920	WESTHEIMER, FRANK H MECHANISM OF ENZYME ACTION	HARVARD UNIVERSITY	CAMBRIDGE	81 MASSACHUSETTS	11-83	0	49,992	PC 73,508
3	R01 GM04712-25S1 11920	WESTHEIMER, FRANK H MECHANISM OF ENZYME ACTION	HARVARD UNIVERSITY	CAMBRIDGE	81 MASSACHUSETTS	11-83	0	26,000	PC 38,740
2	R01 GM05301-25 11920	CONN, ERIC E METABOLISM OF AROMATIC COMPOUNDS	UNIVERSITY OF CALIFORNIA DAVIS	DAVIS	82 CALIFORNIA	02-83	4	76,903	PC 96,558
5	R01 GM05811-22 11920	MORAWETZ, HERBERT SYNTHETIC POLYMER STUDIES RELATED TO BIOLOGY	POLYTECHNIC INSTITUTE OF NEW YORK	NEW YORK	82 NEW YORK	06-83	0	48,482	BBCB 75,328
5	R01 GM08347-22 11920	SPENCE, JACK T THE FUNCTION OF MOLYBDENUM IN BIOLOGICAL SYSTEMS	UTAH STATE UNIVERSITY	LOGAN	82 UTAH	04-83	1	42,700	BMT 57,645
5	R01 GM10040-20 11920	BUSCH, DARYLE H BIOMIMETIC METAL COMPLEXES OF MACROCYLIC LIGANDS	OHIO STATE UNIVERSITY	COLUMBUS	82 OHIO	06-83	0	80,292	BMT 110,000
5	R01 GM12152-18 11920	MARGERUM, DALE W METAL ION TRANSFER AND CATALYSIS IN PEPTIDE COMPLEXES	PURDUE UNIVERSITY WEST LAFAYETTE	WEST LAFAYETTE	82 INDIANA	11-82	2	55,014	BMT 75,973
5	R01 GM12640-18 11920	CRAM, DONALD J HOST MOLECULES THAT COMPLEX AND CATALYZE	UNIVERSITY OF CALIFORNIA LOS ANGELES	LOS ANGELES	82 CALIFORNIA	11-82	2	85,041	MCHA 111,404
5	R01 GM12832-14 11920	RITCHIE, CALVIN D NUCLEOPHILIC REACTIVITY	STATE UNIVERSITY OF NEW YORK AT BUFFALO	BUFFALO	81 NEW YORK	12-82	0	26,113	BBCA 37,153
5	R01 GM13306-17 11920	BENKOVIC, STEPHEN J PHOSPHATE ACTIVATION MECHANISMS	PENNSYLVANIA STATE UNIVERSITY UNIV PARK	UNIVERSITY PARK	82 PENNSYLVANIA	12-82	3	123,495	BIO 162,450
5	R01 GM13498-17 11920	SPIRO, THOMAS G METAL CENTERS IN BIOLOGICAL SYSTEMS	PRINCETON UNIVERSITY	PRINCETON	82 NEW JERSEY	07-83	2	67,710	BBCB 105,924
5	R01 GM13638-17 11920	TAUBE, HENRY BIOCHEMICALLY SIGNIFICANT MOLECULES AS LIGANDS	STANFORD UNIVERSITY	STANFORD	82 CALIFORNIA	03-83	1	73,364	BMT 115,915
2	R01 GM13854-16 11920	WASSERMAN, HARRY H REACTIONS OF MOLECULAR OXYGEN WITH ORGANIC SUBSTRATES	YALE UNIVERSITY	NEW HAVEN	82 CONNECTICUT	06-83	3	76,766	MCHA 127,607
5	R01 GM13956-17 11920	COATES, ROBERT M SPECIFICITY IN TERPENE AND STEROL BIOSYNTHESIS	UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN	URBANA	82 ILLINOIS	02-83	0	72,275	MCHA 102,284
5	R01 GM15373-13 11920	JENSEN, FREDERICK R DEMETALLATION, ALKYLATION AND BIOCHEMICAL PROCESSES	UNIVERSITY OF CALIFORNIA BERKELEY	BERKELEY	82 CALIFORNIA	02-83	0	57,650	BMT 75,190
5	R01 GM17880-12 11920	COLLMAN, JAMES P MODELS FOR CYTOCHROME P450 HYDROXYLASES	STANFORD UNIVERSITY	STANFORD	82 CALIFORNIA	11-82	0	79,602	MCHB 125,771

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	BIORELATED CHEMICAL PROCESSES CHEMICAL PROCESSES OF BIOMEDICAL SIGNIFICANCE									
5	R01 GM18362-05 11920	YANKWICH, PETER E MODELING THE TRANSITION STATE OF ENZYMIC REACTIONS	UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN	URBANA	81 ILLINOIS	05-83	1	31,464	BBCA	45,234
5	R01 GM18754-21 11920	BRESLOW, RONALD C BIOCHEMICAL MODEL REACTIONS	COLUMBIA UNIVERSITY	NEW YORK	82 NEW YORK	12-82	3	111,610	MCHA	186,382
5	R01 GM18852-12 11920	FLOSS, HEINZ G STEREOCHEMISTRY OF ENZYME REACTIONS	PURDUE UNIVERSITY WEST LAFAYETTE	WEST LAFAYETTE	82 INDIANA	08-83	2	96,955	BIO	134,617
2	R01 GM19906-06 11920	DOWD, PAUL SYNTHESIS OF VITAMIN B12 MODELS	UNIVERSITY OF PITTSBURGH	PITTSBURGH	82 PENNSYLVANIA	11-82	2	58,530	BNP	88,446
5	R01 GM20080-10 11920	FOOTE, CHRISTOPHER S OXIDATION OF MODEL BIOLOGICAL SYSTEMS	UNIVERSITY OF CALIFORNIA LOS ANGELES	LOS ANGELES	82 CALIFORNIA	05-83	0	53,246	BBCA	69,752
2	R01 GM20117-19 11920	GROSSWEINER, LEONARD I FAST PHOTOSENSITIZED REACTIONS OF AROMATIC COMPOUNDS	ILLINOIS INSTITUTE OF TECHNOLOGY	CHICAGO	82 ILLINOIS	04-83	2	52,908	BBCA	86,472
2	R01 GM20198-09 11920	SCHOWEN, RICHARD L ENZYME-EFFECTOR DESIGN	UNIVERSITY OF KANSAS LAWRENCE	LAWRENCE	82 KANSAS	06-83	2	87,001	BIO	1 116,275
2	R01 GM20199-07 11920	SCHOWEN, RICHARD L BIOLOGICAL TRANSMETHYLATION	UNIVERSITY OF KANSAS LAWRENCE	LAWRENCE	82 KANSAS	11-82	2	67,382	PB	86,393
5	R01 GM20877-08 11920	BALLOU, DAVID P RAPID KINETICS STUDY OF BIOLOGICAL OXYGENASES	UNIVERSITY OF MICHIGAN AT ANN ARBOR	ANN ARBOR	82 MICHIGAN	08-83	3	79,021	BMT	121,953
5	R01 GM20985-09 11920	NEWKOME, GEORGE R PYRIDINE HETEROMACROCYCLES: FUTURE BIOLOGICAL MODELS	LOUISIANA STATE UNIV A&M COL BATON ROUGE	BATON ROUGE	82 LOUISIANA	06-83	0	25,802	BMT	33,822
5	R01 GM21034-09 11920	DRYHURST, GLENN ELECTROCHEMISTRY OF PURINES	UNIVERSITY OF OKLAHOMA NORMAN	NORMAN	82 OKLAHOMA	06-83	0	55,097	SSS	74,381
5	R01 GM21328-08 11920	POULTER, C DALE SUBSTRATE ANALOGS FOR TERPENE CONDENSATION REACTIONS	UNIVERSITY OF UTAH	SALT LAKE CITY	82 UTAH	05-83	3	104,888	BNP	150,738
5	R01 GM21466-08 11920	HOLMES, ROBERT R PHOSPHATE MODEL FOR NUCLEASE ACTION	UNIVERSITY OF MASSACHUSETTS AMHERST	AMHERST	82 MASSACHUSETTS	12-82	1	44,436	BMT	64,432
2	R01 GM21784-08 11920	HANZLIK, ROBERT P THE ROLE OF EPOXIDES IN METABOLISM AND DRUG TOXICITY	UNIVERSITY OF KANSAS LAWRENCE	LAWRENCE	82 KANSAS	07-83	2	67,183	TOX	89,679
5	R01 GM21844-06 11920	TAYLOR, LARRY T STRUCTURE AND REACTIVITY OF MANGANESE-OXYGEN COMPLEXES	VIRGINIA POLYTECHNIC INST AND ST UNIV	BLACKSBURG	81 VIRGINIA	03-83	0	31,994	BMT	45,751
5	R01 GM21882-08 11920	ETZLER, MARILYNN E STRUCTURE, DEVELOPMENT, AND MODIFICATIONS OF LECTINS	UNIVERSITY OF CALIFORNIA DAVIS	DAVIS	82 CALIFORNIA	01-83	0	54,771	PC	71,750

TABLE-4 RESEARCH GRANTS ACTIVE AS OF 09-30-82 BY PROGRAM AREA AND GRANT NUMBER

T	GRANT NUMBER / PROG-AREA	INVESTIGATOR / PROJECT TITLE	GRANTEE INSTITUTION	CITY	FY / STATE	END-DATE	FUT-YRS AVAILABLE DIRECT	IRG SUB DOLLARS TOTAL
BIORELATED CHEMICAL PROCESSES								
		CHEMICAL PROCESSES OF BIOMEDICAL SIGNIFICANCE						
5	R01 GM22566-07 11920	ZUBIETA, JON A MOLYBDENUM & SULFUR COMPLEXES--MODELS FOR METALLOENZYMES	STATE UNIVERSITY OF NEW YORK AT ALBANY	ALBANY	82 NEW YORK	06-83	0 34,056	BMT 49,177
5	R01 GM22761-06 11920	SAWYER, DONALD T THE CHEMISTRY OF BIOLOGICAL MANGANESE	UNIVERSITY OF CALIFORNIA RIVERSIDE	RIVERSIDE	82 CALIFORNIA	11-82	0 47,996	BMT 62,410
5	R01 GM23270-06 11920	JONES, ALUN G CHEMISTRY OF TECHNETIUM RELATED TO NUCLEAR MEDICINE	HARVARD UNIVERSITY	BOSTON	82 MASSACHUSETTS	01-83	0 142,350	BMT 186,436
5	R01 GM23375-06 11920	BERSON, JEROME A SPIN-REACTIVITY LABELS AS DIMENSIONAL PROBES	YALE UNIVERSITY	NEW HAVEN	82 CONNECTICUT	04-83	0 54,379	MCHA 85,919
5	R01 GM23534-06 11920	GUTSCHE, C DAVID CALIXARENES AS ENZYME MODELS	WASHINGTON UNIVERSITY	SAINT LOUIS	82 MISSOURI	12-82	0 49,306	SSS 75,874
5	R01 GM23656-06 11920	BIELSKI, BENON H BIOLOGICAL SUPEROXIDE RADICAL MECHANISMS	ASSOCIATED UNIV-BROOKHAVEN NATL LAB	UPTON	82 NEW YORK	12-82	0 57,955	RAD 90,928
5	R01 GM23773-07 11920	HOGENKAMP, HENRICUS P STRUCTURE AND REACTIONS OF THE COBAMIDE COENZYMES	UNIVERSITY OF MINNESOTA OF MNPLS-ST PAUL	MINNEAPOLIS	82 MINNESOTA	08-83	0 83,866	BIO 116,574
5	R01 GM24053-03 11920	NEWKOME, GEORGE R SYNTHETIC MACROCYCLES AS ENZYMATIC REDOX MIMICS	LOUISIANA STATE UNIV A&M COL BATON ROUGE	BATON ROUGE	81 LOUISIANA	09-82	0 22,838	BMT 30,758
5	R01 GM24144-05 11920	KAGAN, JACQUES PHOTOTOXICITY OF A-TERTHIENYL AND RELATED COMPOUNDS	UNIVERSITY OF ILLINOIS CHICAGO CIRCLE	CHICAGO	82 ILLINOIS	08-83	0 54,815	TOX 82,516
2	R01 GM24235-04 11920	RODGERS, MICHAEL A SINGLET OXYGEN IN BIOLOGICAL ENVIRONMENTS	UNIVERSITY OF TEXAS AUSTIN	AUSTIN	82 TEXAS	12-82	2 77,730	CPA 99,336
2	R01 GM24420-04 11920	ABERHART, DONALD J STUDIES ON ENZYME STEREOCHEMISTRY	WORCESTER FDN FOR EXPER BIOLOGY	SHREWSBURY	82 MASSACHUSETTS	11-82	3 77,832	BNP 125,008
2	R01 GM24480-04 11920	COFFMAN, ROBERT E ELECTRONIC AND MAGNETIC INTERACTIONS OF ADENOSYLCOBALAMI	UNIVERSITY OF IOWA	IOWA CITY	82 IOWA	08-83	2 54,810	BMT 73,253
5	R01 GM24748-03 11920	PIZER, RICHARD D THE DYNAMICS OF CRYPTATE FORMATION	BROOKLYN COLLEGE	NEW YORK	82 NEW YORK	12-82	0 17,756	MCHB 28,694
5	R01 GM24832-06 11920	OLAH, GEORGE A HYDROCARBONS & THEIR DERIVATIVES AS BIOALKYLATING AGENTS	UNIVERSITY OF SOUTHERN CALIFORNIA	LOS ANGELES	82 CALIFORNIA	06-83	0 93,050	BBCA 142,367
5	R01 GM25122-05 11920	RAKOWSKI-DU BOIS, MARY C SYNTHESES AND STUDIES OF IRON-MOLYBDENUM COMPLEXES	UNIVERSITY OF COLORADO AT BOULDER	BOULDER	82 COLORADO	02-83	1 40,001	BMT 55,801
5	R01 GM25172-05 11920	KADISH, KARL M REDOX REACTIONS OF IRON PORPHYRINS	UNIVERSITY OF HOUSTON AT HOUSTON	HOUSTON	82 TEXAS	07-83	1 54,527	BMT 70,885

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	BIORELATED CHEMICAL PROCESSES CHEMICAL PROCESSES OF BIOMEDICAL SIGNIFICANCE							
5	R01 GM25288-02 11920	CHUNG, SUNG-KEE PROBES OF NAD-DEPENDENT DEHYDROGENASE REACTION	TEXAS AGRI AND MECH UNIV	COLLEGE STATION COLLEGE STATION	81 TEXAS	10-82	0 21,976	BMT 28,793
5	R01 GM25757-05 11920	BRYANT, ROBERT G ALKALINE EARTH ION NUCLEAR MAGNETIC RESONANCE	UNIVERSITY OF MINNESOTA OF MNPLS-ST PAUL	MINNEAPOLIS	82 MINNESOTA	07-83	1 72,169	BMT 100,315
2	R01 GM25845-04 AM 11920	MILLER, MARVIN J SYNTHESIS OF FERRICHROMES AND RELATED IRON CHELATORS	UNIVERSITY OF NOTRE DAME	NOTRE DAME	82 INDIANA	08-83	2 51,295	BMT 71,899
2	R01 GM25912-04 11920	REBEK, JULIUS, JR STUDIES IN CATALYSIS AND MECHANISM	UNIVERSITY OF PITTSBURGH	PITTSBURGH	82 PENNSYLVANIA	11-82	2 64,082	BNP 92,205
5	R01 GM25981-04 11920	BRESLOW, RONALD C MODEL AND MECHANISM STUDIES ON ZINC ENZYMES	COLUMBIA UNIVERSITY	NEW YORK	82 NEW YORK	11-82	0 76,410	BMT 128,063
5	R01 GM26074-03 11920	SCHWAB, JOHN M STEREOCHEMISTRY AND MECHANISMS OF ENZYME REACTIONS	CATHOLIC UNIVERSITY OF AMERICA	WASHINGTON	81 DIST OF COL	11-82	0 32,784	MCHA 50,487
2	R01 GM26166-04 11920	PARRY, RONALD J METABOLISM OF CHIRALLY LABELED ADENOSINE	RICE UNIVERSITY	HOUSTON	82 TEXAS	11-82	2 41,082	BNP 55,431
2	R01 GM26226-04 11920	BALCH, ALAN L IRON PORPHYRIN ACTIVATION OF DIOXYGEN/SMALL MOLECULES	UNIVERSITY OF CALIFORNIA DAVIS	DAVIS	82 CALIFORNIA	03-83	4 76,874	BMT 95,745
5	R01 GM26295-03 11920	ELLIS, PAUL D 113CD AND 77SE NMR OF SYSTEMS OF BIOLOGICAL INTEREST	UNIVERSITY OF SOUTH CAROLINA AT COLUMBIA	COLUMBIA	81 SOUTH CAROLINA	11-82	0 46,380	BMT 61,780
2	R01 GM26388-04 11920	BERCHTOLD, GLENN A ARENE OXIDES: IMPORTANCE IN BIOLOGICAL REACTIONS	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	CAMBRIDGE	82 MASSACHUSETTS	06-83	2 76,799	BNP 107,890
5	R01 GM26390-03 11920	CLARKE, MICHAEL J STABLE HEAVY-METAL COMPLEXES OF NUCLEOTIDE AND COENZYME	BOSTON COLLEGE	CHESTNUT HILL	81 MASSACHUSETTS	07-83	0 27,460	BMT 39,943
5	R01 GM26472-03 11920	KAREL, MARCUS FREE RADICAL REACTIONS OF LIPOPEROXIDES AND PROTEINS	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	CAMBRIDGE	82 MASSACHUSETTS	11-82	0 41,838	BBCB 67,296
2	R01 GM26671-04 11920	COUCOUVANIS, DIMITRI N IRON AND MOLYBDENUM COMPLEXES: ENZYME ACTIVE SITES	UNIVERSITY OF IOWA	IOWA CITY	82 IOWA	07-83	2 68,420	BMT 90,848
5	R01 GM26838-03 11920	SIH, CHARLES J MICROBIAL DEGRADATION OF STEROL SIDE CHAINS	UNIVERSITY OF WISCONSIN MADISON	MADISON	82 WISCONSIN	12-82	1 53,535	MCHA 75,362
5	R01 GM26908-03 11920	LIOTTA, DENNIS C IMPORTANT COMPOUNDS VIA ORGANOSELENIUM REAGENTS	EMORY UNIVERSITY	ATLANTA	81 GEORGIA	03-83	0 38,211	MCHA 54,420
5	R01 GM27179-02 11920	LAVALLEE, DAVID K MODELS FOR STUDY OF METALLOPROTEIN REDOX MECHANISMS	HUNTER COLLEGE	NEW YORK	82 NEW YORK	05-83	1 30,766	BMT 49,810

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BIORELATED CHEMICAL PROCESSES									
CHEMICAL PROCESSES OF BIOMEDICAL SIGNIFICANCE									
5	R01 GM27319-06 11920	CASERIO, MARJORIE C ALKYLATION OF DISULFIDES--THIOSULFONIUM IONS	UNIVERSITY OF CALIFORNIA IRVINE	IRVINE	82 CALIFORNIA	07-83	0	32,611	MCHA 45,492
5	R01 GM27355-03 11920	SUKENIK, CHAIM N AQUEOUS MICELLE MEDIATED CHEMICAL SELECTIVITY	CASE WESTERN RESERVE UNIVERSITY	CLEVELAND	82 OHIO	05-83	0	49,400	MCHA 74,594
5	R01 GM27610-03 11920	SCHWAB, JOHN M STEREOCHEMISTRY OF ENZYMATIC RING CLEAVAGE REACTIONS	CATHOLIC UNIVERSITY OF AMERICA	WASHINGTON	82 DIST OF COL	11-82	0	47,709	MCHA 72,518
5	R01 GM27694-03 11920	BAUMGARTEN, HENRY E CHEMICAL AND ELECTROCHEMICAL OXIDATION STUDIES	UNIVERSITY OF NEBRASKA LINCOLN	LINCOLN	82 NEBRASKA	05-83	2	54,577	MCHA 75,316
5	R01 GM27743-03 11920	BARTMESS, JOHN E HYDROGEN BONDING STRENGTHS OF SINGLE MOLECULES TO ANIONS	INDIANA UNIVERSITY BLOOMINGTON	BLOOMINGTON	82 INDIANA	03-83	0	20,451	BBCA 27,953
5	R01 GM28063-03 11920	MUSKER, W KENNETH INTRAMOLECULAR EFFECTS ON ELECTRON TRANSFER PROCESSES	UNIVERSITY OF CALIFORNIA DAVIS	DAVIS	82 CALIFORNIA	06-83	0	42,262	BMT 57,814
5	R01 GM28123-03 11920	RABAN, MORTON CHEMICAL MODELS FOR ACTIVE TRANSPORT OF ALKALI METALS	WAYNE STATE UNIVERSITY	DETROIT	82 MICHIGAN	06-83	0	27,464	BMT 42,013
5	R01 GM28236-03 11920	HILL, RICHARD K STEROCHEMICAL STUDIES OF BIOSYNTHETIC REACTIONS	UNIVERSITY OF GEORGIA	ATHENS	82 GEORGIA	12-82	0	44,638	BIO 61,240
5	R01 GM28375-02 11920	SORRELL, THOMAS N MODELS FOR MOLYBDENUM ENZYMES	UNIVERSITY OF NORTH CAROLINA CHAPEL HILL	CHAPEL HILL	82 NORTH CAROLINA	01-83	1	33,248	BMT 46,177
1	R01 GM28451-01A1 11920	WILSON, LON J MAGNETIC AND MODELING STUDIES OF CYTOCHROME OXIDASE	RICE UNIVERSITY	HOUSTON	82 TEXAS	07-83	2	66,138	BMT 83,784
5	R01 GM28636-02 11920	AVERILL, BRUCE A SYNTHETIC AND PHYSICAL APPROACHES TO METALLOPROTEINS	MICHIGAN STATE UNIVERSITY	EAST LANSING	82 MICHIGAN	12-82	1	45,881	BMT 63,872
5	R01 GM28688-02 11920	DUNAWAY-MARIANO, DEBRA INVESTIGATIONS OF PHOSPHORYL TRANSFER REACTIONS	UNIVERSITY OF MARYLAND COLLEGE PK CAMPUS	COLLEGE PARK	82 MARYLAND	01-83	1	52,813	PB 74,994
5	R01 GM28737-02 11920	WHITE, RONALD E MODES OF OXYGEN ACTIVATION BY CYTOCHROME F-450	UNIVERSITY OF CONNECTICUT HEALTH CENTER	FARMINGTON	82 CONNECTICUT	11-82	1	47,343	PB 68,197
5	R01 GM28856-03 11920	HOLM, RICHARD H BIOLOGICALLY RELATED IRON-SULFUR CHEMISTRY	HARVARD UNIVERSITY	CAMBRIDGE	82 MASSACHUSETTS	06-83	3	120,467	BMT 184,709
5	R01 GM28962-02 11920	KARLIN, KENNETH D NEW COPPER(I) CHEMISTRY-MODELS FOR METALLOPROTEINS	STATE UNIVERSITY OF NEW YORK AT ALBANY	ALBANY	82 NEW YORK	03-83	1	40,339	BMT 57,368
5	R01 GM28990-02 11920	GOULD, STEVEN J STUDIES OF ENZYME REACTION MECHANISMS	UNIVERSITY OF CONNECTICUT STORRS	STORRS	82 CONNECTICUT	03-83	1	33,798	BNP 50,561

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		BIORELATED CHEMICAL PROCESSES CHEMICAL PROCESSES OF BIOMEDICAL SIGNIFICANCE								
5	R01 GM29035-02 11920	SEALY, ROGER C RADICAL REACTIONS OF CATECHOLS AND CATECHOLAMINES	MEDICAL COLLEGE OF WISCONSIN	MILWAUKEE	WISCONSIN	82	03-83	1	34,820	PB 52,230
5	R01 GM29128-02 11920	GANDOUR, RICHARD D CHEMICAL MODELS OF ENZYMATIC CATALYSIS	LOUISIANA STATE UNIV A&M COL BATON ROUGE	BATON ROUGE	LOUISIANA	82	03-83	1	42,590	BHP 56,645
5	R01 GM29150-02 11920	GOKEL, GEORGE W SYNTHETIC CALCIUM REGULATORS FOR MUSCLE TISSUE	UNIVERSITY OF MARYLAND COLLEGE PK CAMPUS	COLLEGE PARK	MARYLAND	82	05-83	0	36,809	MCHA 52,269
5	R01 GM29198-02 11920	DOLPHIN, DAVID H MYELOPEROXIDASE, SIROHEME, B12: SYNTHESIS AND FUNCTION	UNIVERSITY OF BRITISH COLUMBIA	VANCOUVER	CANADA	82	06-83	1	75,549	PB 75,549
5	R01 GM29225-02 11920	MARZILLI, LUIGI G METAL COMPLEXES AS MUTIFUNCTIONAL CATALYSTS	EMORY UNIVERSITY	ATLANTA	GEORGIA	81	03-83	0	42,033	BMT 63,397
1	R01 GM29611-01 AI 11920	THOMAS, MICHAEL J OXYGEN AND OXY-RADICALS IN PHAGOCYTIC KILLING	WAKE FOREST UNIVERSITY	WINSTON-SALEM	NORTH CAROLINA	82	03-83	2	42,639	BBCA 54,424
5	R01 GM29767-02 11920	ANDERSON, GARY L PYRIDO(2.3-D)PYRIMIDINE RIBONUCLEOSIDES	UNIVERSITY OF IOWA	IOWA CITY	IOWA	82	05-83	0	28,500	MCHA 39,330
1	R01 GM30079-01 11920	JOHNSON, RICHARD W ENZYME MODELS BASED ON ANTIBODY-HAPTEN COMPLEXES	HARVARD UNIVERSITY	CAMBRIDGE	MASSACHUSETTS	82	01-83	2	16,735	BHP 25,772
9	R01 GM30286-04 MH 11920	COWARD, JAMES K A MECHANISTIC STUDY OF BIOLOGICAL TRANSALKYLATION	RENSSELAER POLYTECHNIC INSTITUTE	TROY	NEW YORK	82	02-83	2	72,129	PB 105,809
1	R01 GM30301-01 11920	CANE, DAVID E STEREOCHEMICAL STUDIES OF ISOPRENOID BIOSYNTHESIS	BROWN UNIVERSITY	PROVIDENCE	RHODE ISLAND	82	12-82	2	66,000	MCHA 99,282
7	R01 GM30352-01 11920	HOGGARD, PATRICK E LUMINESCENCE OF AMINO ACID AND PEPTIDE COMPLEXES	UNIVERSITY OF NORTH DAKOTA	GRAND FORKS	NORTH DAKOTA	81	09-82	0	33,551	BMT 41,504
1	R13 GM30753-01 GM 11920	ZUBIETA, JON A CONFERENCE ON COPPER COORDINATION CHEMISTRY	STATE UNIVERSITY OF NEW YORK AT ALBANY	ALBANY	NEW YORK	82	03-83	0	2,000	BMT 2,000
5	R01 GM31257-02 11920	TSAI, CHUN-CHE BINDING OF DRUGS TO NUCLEIC ACIDS	KENT STATE UNIVERSITY AT KENT	KENT	OHIO	82	12-82	1	42,228	BBCA 56,520

**	0	*CENTERS (P50)		
**	0	PROGRAM PROJECTS (P01)	0	0
**	92	REGULAR PROJECTS (R01)	0	0
**	1	ALL OTHERS (P30, P41, R13, R23, R25)	5,139,957	7,313,083
**	93	TOTALS	2,000	2,000
			5,141,957	7,315,083

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BIORELATED CHEMICAL PROCESSES RELATIONS BETWEEN CHEMICAL STRUCTURE AND BIOLOGICAL ACTIVITY									
5	R01 GM07487-22 11930	ZIMMERMAN, HOWARD E PHOTOCHEMISTRY OF ORGANIC MOLECULES	UNIVERSITY OF WISCONSIN MADISON	MADISON	WISCONSIN	82	07-83	1 87,446	MCHA 123,113
2	R01 GM10265-20 11930	LETSINGER, ROBERT L SYNTHETIC POLYNUCLEOTIDES AS SITE SPECIFIC REAGENTS	NORTHWESTERN UNIVERSITY	EVANSTON	ILLINOIS	82	06-83	3 81,754	BNP 110,693
3	R01 GM10265-2051 11930	LETSINGER, ROBERT L NIGMS SHARED INSTRUMENTATION GRANT	NORTHWESTERN UNIVERSITY	EVANSTON	ILLINOIS	82	06-83	2 65,485	SSS 65,937
5	R01 GM25242-04 11930	ABRAMOVITCH, RUDOLPH A BIOLOGICALLY ACTIVE COMPOUNDS FROM N-OXIDES AND YLIDES	CLEMSON UNIVERSITY	CLEMSON	SOUTH CAROLINA	81	12-82	0 66,986	MCHA 97,919
5	R01 GM25252-04 11930	LAMBETH, DAVID O SYNTHESIS AND PROPERTIES OF S-ALKYLISOTHIAZOLIDINES	UNIVERSITY OF NORTH DAKOTA	GRAND FORKS	NORTH DAKOTA	81	12-82	0 18,059	MCHA 24,610
5	R01 GM25727-03 11930	HALL, STAN S GLYOXALASE I INHIBITOR STUDIES AND ANTITUMOR AGENTS	RUTGERS THE STATE UNIV NEWARK	NEWARK	NEW JERSEY	81	06-83	0 33,739	BMT 53,308
5	R01 GM26428-18 11930	DENNEY, DONALD B PREPARATION AND CHEMISTRY OF ORGANOPHOSPHORUS COMPOUNDS	RUTGERS THE STATE UNIV NEW BRUNSWICK	NEW BRUNSWICK	NEW JERSEY	82	04-83	0 52,055	MCHA 82,247
2	R01 GM26486-04 11930	KOLHOUSE, JOHN F THE METABOLIC ROLE OF COBALAMIN AND FOLATE IN MAMMALS	UNIVERSITY OF COLORADO HLTH SCIENCES CTR	DENVER	COLORADO	82	06-83	4 71,435	BMT 86,745
5	R01 GM26711-03 11930	EMERY, THOMAS F SYNTHESIS AND BIOASSAY OF SIDEROCHROME ANALOGS	UTAH STATE UNIVERSITY	LOGAN	UTAH	82	02-83	0 35,645	BMT 48,121
2	R01 GM26867-04 11930	MILLER, MARVIN J SYNTHESIS OF BETA-LACTAMS FROM HYDROXAMIC ACIDS	UNIVERSITY OF NOTRE DAME	NOTRE DAME	INDIANA	82	06-83	2 86,048	BNP 120,723
5	R01 GM27022-03 11930	CARPENTER, BARRY K TEST OF A NEW THEORY ON STRUCTURE AND REACTIVITY	CORNELL UNIVERSITY ITHACA	ITHACA	NEW YORK	82	12-82	0 44,814	MCHA 70,600
2	R01 GM27109-03 11930	MATTESON, DONALD S AMINO BORONIC ACIDS	WASHINGTON STATE UNIVERSITY	PULLMAN	WASHINGTON	82	08-83	2 29,932	BMT 42,951
5	R01 GM27620-03 11930	SCHWEIZER, EDWARD E MULTI RING PYRAZOLOHETEROCYCLES FROM ALLENYL AZINES	UNIVERSITY OF DELAWARE	NEWARK	DELAWARE	82	05-83	1 37,179	MCHA 54,874
5	R01 GM28193-03 11930	O'DONNELL, MARTIN J SCHIFF BASE SYNTHONS IN AMINO ACID CHEMISTRY	INDIANA UNIV-PURDUE UNIV AT INDIANAPOLIS	INDIANAPOLIS	INDIANA	82	07-83	0 47,482	MCHA 68,849
5	R01 GM28792-05 11930	FALLER, JOHN W METAL CHELATE PROBES OF DNA-DRUG INTERACTIONS	YALE UNIVERSITY	NEW HAVEN	CONNECTICUT	82	03-83	0 36,306	BMT 57,363
5	R01 GM23826-08 11930	GIBBONS, WILLIAM A STRUCTURE, SPECTROSCOPY, AND FUNCTION OF NEUROPEPTIDES	UNIVERSITY OF WISCONSIN MADISON	MADISON	WISCONSIN	82	06-83	2 73,094	BBCB 102,979

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		BIORELATED CHEMICAL PROCESSES RELATIONS BETWEEN CHEMICAL STRUCTURE AND BIOLOGICAL ACTIVITY							
5	R01 GM29258-10 11930	EATON, PHILIP E SYNTHESIS OF DODECAHEDRANE AND HETERODODECAHEDRANES	UNIVERSITY OF CHICAGO	CHICAGO	82 ILLINOIS	03-83	1	107,746	MCHA 157,533
5	R01 GM29291-02 11930	MEYER, RICH B, JR MECHANISM PROBES FOR NUCLEOTIDE BIOSYNTHETIC ENZYMES	WASHINGTON STATE UNIVERSITY	PULLMAN	82 WASHINGTON	11-82	0	40,212	MCHA 58,307
5	R01 GM29332-09 11930	BORCHARDT, RONALD T STRUCTURAL ANALOGS OF S-ADENOSYLMETHIONINE	UNIVERSITY OF KANSAS LAWRENCE	LAWRENCE	82 KANSAS	11-82	3	66,892	PBC 91,272
5	R01 GM29497-02 11430	RICH, DANIEL H INHIBITORS OF AMINOPEPTIDASES	UNIVERSITY OF WISCONSIN MADISON	MADISON	82 WISCONSIN	08-83	2	66,700	BNP 94,137
9	R01 GM30267-04 CA 11930	WILSON, W DAVID INTERACTION OF ANTHRACYCLINE DRUGS WITH DNA	GEORGIA STATE UNIVERSITY	ATLANTA	82 GEORGIA	12-82	2	32,250	BBCA 44,326
5	R01 GM30310-02 11930	DAVES, G DOYLE, JR PALLADIUM CATALYZED SYNTHESIS OF C-NUCLEOSIDES	LEHIGH UNIVERSITY	BETHLEHEM	82 PENNSYLVANIA	06-83	0	49,448	MCHA 83,567
1	R01 GM30362-01 CA 11930	HANSCH, CORWIN H FUNDAMENTALS OF DRUG DESIGN	POMONA COLLEGE	CLAREMONT	82 CALIFORNIA	04-83	2	68,060	SSS 106,065

**	0	*CENTERS (P50)		
**	0	PROGRAM PROJECTS (P01)	0	0
**	23	REGULAR PROJECTS (R01)	0	0
**	0	ALL OTHERS (P30, P41, R13, R23, R25)	1,298,767	1,846,239
**	23	TOTALS	0	0
			1,298,767	1,846,239

TABLE-4 RESEARCH GRANTS ACTIVE AS OF 09-30-82 BY PROGRAM AREA AND GRANT NUMBER

T	GRANT NUMBER / PROG-AREA	INVESTIGATOR / PROJECT TITLE	GRANTEE INSTITUTION	CITY	FY / STATE	END-DATE	FUT-YRS AVAILABLE	DOLLARS DIRECT	IRG SUB / TOTAL
BIORELATED CHEMICAL PROCESSES									
		DEVELOPMENT AND APPLICATION OF CHEMICAL METHODOLOGY AND INSTRUMENTATION TO COMPOUNDS OF BIOCHEMICAL INTEREST							
5	R01 GM06168-23 11940	SCHUERCH, CONRAD STEREOSPECIFIC SYNTHESIS OF POLYSACCHARIDES	COLLEGE OF ENVIRONMENTAL SCI & FORESTRY	SYRACUSE	82 NEW YORK	06-83	0	47,000	MCHA 69,649
5	R01 GM07874-20 11940	WASSERMAN, HARRY H SYNTHESIS OF B-LACTUM ANTIBIOTICS AND MACROCYCLIC LACTA	YALE UNIVERSITY	NEW HAVEN	82 CONNECTICUT	06-83	2	53,600	MCHA 90,048
2	R01 GM09706-17 11440	CARPINO, LOUIS A NEW AMINO-PROTECTING GROUPS	UNIVERSITY OF MASSACHUSETTS AMHERST	AMHERST	82 MASSACHUSETTS	08-83	4	92,664	MCHA 118,098
5	R01 GM10937-20 11940	BROWN, HERBERT C STEREOSPECIFIC SYNTHESES VIA HYDROBORATION	PURDUE UNIVERSITY WEST LAFAYETTE	WEST LAFAYETTE	82 INDIANA	06-83	3	83,443	MCHA 116,820
2	R01 GM13453-17 11440	KEMP, DANIEL S SYNTHESIS AND REACTIONS OF PEPTIDES	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	CAMBRIDGE	82 MASSACHUSETTS	06-83	4	140,188	BNP 188,504
5	R01 GM13598-17 11940	TROST, BARRY M MACROLIDES, STEROIDS, PROSTANOIDS, ETC--SYNTHETIC DESIGN	UNIVERSITY OF WISCONSIN MADISON	MADISON	82 WISCONSIN	05-83	0	84,662	MCHA 118,318
5	R01 GM15997-13 11940	HART, HAROLD STUDIES IN ORGANIC SYNTHESES	MICHIGAN STATE UNIVERSITY	EAST LANSING	82 MICHIGAN	05-83	1	50,324	MCHA 70,957
5	R01 GM16611-12 11940	GIVENS, RICHARD S EXPLORATORY AND SYNTHETIC PHOTOCHEMISTRY	UNIVERSITY OF KANSAS LAWRENCE	LAWRENCE	81 KANSAS	11-82	0	41,059	MCHA 54,008
5	R01 GM18519-12 11940	COREY, ELIAS J COMPUTER-ASSISTED ANALYSIS OF CHEMICAL SYNTHESIS	HARVARD UNIVERSITY	CAMBRIDGE	82 MASSACHUSETTS	06-83	3	121,600	MCHA 187,264
2	R01 GM18752-09A1 11440	GLASS, JOHN D SOLID-PHASE PEPTIDE SYNTHESIS IN ORGANIC SOLVENT MEDIA	MOUNT SINAI SCHOOL OF MEDICINE	NEW YORK	82 NEW YORK	08-83	2	77,904	MCHA 115,342
5	R01 GM18874-11 11940	BEAK, PETER A NEW SYNTHETIC METHODS USEFUL FOR CHEMOTHERAPEUTICS	UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN	URBANA	82 ILLINOIS	07-83	2	53,736	MCHA 76,096
5	R01 GM21148-06 11940	LICHTER, ROBERT L NATURAL-ABUNDANCE 15N NMR OF BIOORGANIC COMPOUNDS	HUNTER COLLEGE	NEW YORK	81 NEW YORK	11-82	0	52,188	BBCB 83,254
5	R01 GM21248-03 11940	FENSELAU, CATHERINE C APPLICATIONS OF MASS SPECTROMETRY IN PHARMACOLOGY	JOHNS HOPKINS UNIVERSITY	BALTIMORE	82 MARYLAND	06-83	0	76,933	SSS 115,400
5	R01 GM21703-06 11940	MUNK, MORTON E COMPUTER-ASSISTED STRUCTURE ELUCIDATION	ARIZONA STATE UNIVERSITY	TEMPE	82 ARIZONA	12-82	0	70,652	SSS 106,685
2	R01 GM22346-06 11940	GASSMAN, PAUL G STEREOSPECIFIC FUNCTIONALIZATION OF AROMATIC AMINES	UNIVERSITY OF MINNESOTA OF MNPLS-ST PAUL	MINNEAPOLIS	82 MINNESOTA	11-82	1	44,945	MCHA 61,125
2	R01 GM22479-07 11940	VOLLHARDT, K PETER NOVEL ROUTES TO PHYSIOLOGICALLY ACTIVE COMPOUNDS	UNIVERSITY OF CALIFORNIA BERKELEY	BERKELEY	82 CALIFORNIA	03-83	4	69,424	BMT 88,093

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BIORELATED CHEMICAL PROCESSES										
		DEVELOPMENT AND APPLICATION OF CHEMICAL METHODOLOGY AND INSTRUMENTATION TO COMPOUNDS OF BIOCHEMICAL INTEREST								
5	R01 GM22760-07 11940	COHEN, THEODORE NEW METHODS FOR SYNTHESIS AND MODIFICATION OF RINGS	UNIVERSITY OF PITTSBURGH	PITTSBURGH	PENNSYLVANIA	82	08-83	1	69,068	MCHA 104,983
5	R01 GM22787-06 11940	VOUROS, PAUL MASS SPECTROMETRY OF BIOLOGICALLY SIGNIFICANT COMPOUNDS	NORTHEASTERN UNIVERSITY	BOSTON	MASSACHUSETTS	81	03-83	0	51,700	BMT 76,322
5	R01 GM22995-06 11940	SHEA, KENNETH J TEMPLATE SYNTHESIS OF MACROMOLECULES	UNIVERSITY OF CALIFORNIA IRVINE	IRVINE	CALIFORNIA	82	05-83	0	39,066	MCHA 51,176
5	R01 GM24474-05 11940	KRAUS, GEORGE A SILYL ENONES IN ANTHRACYCLINE SYNTHESIS	IOWA STATE UNIVERSITY OF SCIENCE & TECH	AMES	IOWA	82	02-83	0	42,748	MCHA 57,282
5	R01 GM24517-05 11940	MIDLAND, M MARK ASYMMETRIC REDUCTIONS VIA TRIALKYLBORANES	UNIVERSITY OF CALIFORNIA RIVERSIDE	RIVERSIDE	CALIFORNIA	82	12-82	1	63,000	BMT 82,530
5	R01 GM25459-05 11940	BERGMAN, ROBERT G C-N BOND FORMATION USING METAL-BASED REAGENTS	UNIVERSITY OF CALIFORNIA BERKELEY	BERKELEY	CALIFORNIA	82	07-83	3	80,322	BMT 113,977
5	R01 GM25908-02 11940	MANATT, STANLEY L USE OF HMR IN SOLID-PHASE PEPTIDE SYNTHESES	CALIFORNIA INSTITUTE OF TECHNOLOGY	PASADENA	CALIFORNIA	82	02-83	1	88,117	MCHA 88,117
2	R01 GM26178-04 11940	HEGEDUS, LOUIS S ORGANIMETALLIC SYNTHESES OF BIOACTIVE COMPOUNDS	COLORADO STATE UNIVERSITY	FORT COLLINS	COLORADO	82	03-83	2	57,472	BMT 76,324
5	R01 GM26245-03 11940	EPSTEIN, WILLIAM W PHOTOCHEMICAL TECHNIQUES ON BIOLOGICAL PROBLEMS	UNIVERSITY OF UTAH	SALT LAKE CITY	UTAH	81	11-82	0	46,914	MCHA 67,755
5	R01 GM26265-03 11940	HARDING, KENN E SPIROCYCLIC SYSTEM SYNTHESIS--PI CATIONIC CYCLIZATION	TEXAS AGRI AND MECH UNIV COLLEGE STATION	COLLEGE STATION	TEXAS	81	09-82	0	38,364	MCHA 51,024
5	R01 GM26268-03 11940	BERGBREITER, DAVID E ELECTROPHILIC ASYMMETRIC SYNTHESIS	TEXAS AGRI AND MECH UNIV COLLEGE STATION	COLLEGE STATION	TEXAS	81	09-82	0	45,701	MCHA 60,386
5	R01 GM26294-03 11940	SCHORE, NEIL E SYNTHESIS OF BIOLOGICALLY ACTIVE CYCLOPENTENONES	UNIVERSITY OF CALIFORNIA DAVIS	DAVIS	CALIFORNIA	81	03-83	0	36,494	BMT 47,807
5	R01 GM26324-03 11840	ISIED, STEPHAN S INERT METAL ION PROTECTING GROUPS IN PEPTIDE SYNTHESIS	RUTGERS THE STATE UNIV NEW BRUNSWICK	NEW BRUNSWICK	NEW JERSEY	81	09-82	0	38,829	BMT 59,020
2	R01 GM26666-04 11440	DESIDERIO, DOMINIC M MASS SPECTROMETRY OF BIOLOGICALLY IMPORTANT PEPTIDES	UNIVERSITY OF TENN CENTER HEALTH SCIEN	MEMPHIS	TENNESSEE	82	08-83	2	101,107	BMT 141,481
2	R01 GM26760-04 11940	NICHOLAS, KENNETH M SYNTHETIC UTILITY OF METAL-STABILIZED CARBENIUM IONS	BOSTON COLLEGE	CHESTNUT HILL	MASSACHUSETTS	82	06-83	2	35,669	BMT 51,963
2	R01 GM26782-04 11940	ROUSH, WILLIAM R INTRAMOLECULAR DIELS-ALDER REACTIONS	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	CAMBRIDGE	MASSACHUSETTS	82	06-83	2	61,068	MCHA 92,003

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T	GRANT NUMBER / PROG-AREA	INVESTIGATOR / PROJECT TITLE	GRANTEE INSTITUTION	CITY	FY / STATE	END-DATE	FUT-YRS AVAILABLE	IRG / DIRECT	SUB DOLLARS / TOTAL
		BIORELATED CHEMICAL PROCESSES DEVELOPMENT AND APPLICATION OF CHEMICAL METHODOLOGY AND INSTRUMENTATION TO COMPOUNDS OF BIOCHEMICAL INTEREST							
5	R01 GM27135-03 11940	MORGAN, STEPHEN L PYROLYSIS GC-MS OF BIOMEDICALLY IMPORTANT COMPOUNDS	UNIVERSITY OF SOUTH CAROLINA AT COLUMBIA	COLUMBIA	82 SOUTH CAROLINA	07-83	0 31,217	SSS 45,296	
5	R01 GM27137-03 11940	KEANA, JOHN F NEW PROBES AND REAGENTS FOR BIOLOGICAL STUDIES	UNIVERSITY OF OREGON	EUGENE	82 OREGON	01-83	1 56,069	MCHA 75,046	
5	R01 GM27251-03 11940	MARIANO, PATRICK S SYNTHESIS OF N-ALLYLIMINIUM SALT-PHOTOCYCLIZATIONS	UNIVERSITY OF MARYLAND COLLEGE PK CAMPUS	COLLEGE PARK	82 MARYLAND	12-82	0 46,054	MCHA 65,397	
5	R01 GM27932-03 11940	REBEK, JULIUS, JR NEW EPOXIDATION REAGENTS	UNIVERSITY OF PITTSBURGH	PITTSBURGH	82 PENNSYLVANIA	03-83	0 46,824	MCHA 71,172	
2	R01 GM27947-03 11940	NEGISHI, EI-ICHI OLEFINS AND CHIRAL ALIPHATICS VIA ORGANOMETALLICS	PURDUE UNIVERSITY WEST LAFAYETTE	WEST LAFAYETTE	82 INDIANA	08-83	2 56,578	BMT 78,119	
5	R01 GM27983-03 11940	TAYLOR, EDWARD C NOVEL AMINO GROUP TRANFORMATIONS IN HETEROCYCLES	PRINCETON UNIVERSITY	PRINCETON	82 NEW JERSEY	08-83	0 46,836	MCHA 76,811	
5	R01 GM28273-03 11940	DANHEISER, RICK L PERICYCLIC REACTIONS FOR ORGANIC SYNTHESIS	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	CAMBRIDGE	82 MASSACHUSETTS	06-83	0 45,349	MCHA 68,704	
5	R01 GM28384-02 11940	SHARPLESS, K BARRY ASYMMETRIC OXIDATION OF ORGANIC COMPOUNDS	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	CAMBRIDGE	82 MASSACHUSETTS	12-82	2 83,633	BMT 129,835	
5	R01 GM28497-02 11940	GREEN, MARK R DYNAMIC STEREOCHEMISTRY	POLYTECHNIC INSTITUTE OF NEW YORK	NEW YORK	81 NEW YORK	11-82	0 39,809	MCHB 64,602	
5	R01 GM28850-02 11440	LOUDON, G MARC CARBOXYL-TERMINAL PEPTIDE SEQUENCING	PURDUE UNIVERSITY WEST LAFAYETTE	WEST LAFAYETTE	82 INDIANA	08-83	1 72,655	MCHA 100,317	
5	R01 GM28934-02 11440	BARANY, GEORGE NEW MILD PROTECTION STRATEGIES FOR PEPTIDE SYNTHESIS	UNIVERSITY OF MINNESOTA OF MNPLS-ST PAUL	MINNEAPOLIS	82 MINNESOTA	03-83	1 59,439	MCHA 80,837	
5	R01 GM28938-02 11940	BROOKHART, MAURICE S DEVELOPMENT AND USE OF MANGANESE IN ORGANIC SYNTHESIS	UNIVERSITY OF NORTH CAROLINA CHAPEL HILL	CHAPEL HILL	82 NORTH CAROLINA	06-83	1 65,172	BMT 86,888	
2	R01 GM29290-02 11940	BOECKMAN, ROBERT K, JR METHODOLOGY FOR THE CONSTRUCTION OF COMPLEX MOLECULES	UNIVERSITY OF ROCHESTER	ROCHESTER	82 NEW YORK	11-82	3 78,661	BNP 132,726	
1	R01 GM29549-01A1 11940	NELSEN, STEPHEN F REACTIVITY OF AMINO NITROGEN COMPOUNDS	UNIVERSITY OF WISCONSIN MADISON	MADISON	82 WISCONSIN	06-83	2 42,209	MCHA 58,104	
1	R01 GM29801-01A1 11940	MAGNUS, PHILIP D SYNTHESIS OF MOLECULES OF BIOLOGICAL INTEREST	INDIANA UNIVERSITY BLOOMINGTON	BLOOMINGTON	82 INDIANA	03-83	2 67,051	MCHA 92,857	
1	R01 GM30052-01A1 11940	POSNER, GARY H ASYMMETRIC SYNTHESIS OF PHYSIOLOGICALLY ACTIVE COMPOUNDS	JOHNS HOPKINS UNIVERSITY	BALTIMORE	82 MARYLAND	08-83	2 53,620	MCHA 77,080	

T	GRANT NUMBER / PROG-AREA	INVESTIGATOR / PROJECT TITLE	GRANTEE INSTITUTION	CITY	STATE	FY	END-DATE	FUT-YRS AVAILABLE	DOLLARS DIRECT	DOLLARS TOTAL	IRG	SUB
BIORELATED CHEMICAL PROCESSES												
DEVELOPMENT AND APPLICATION OF CHEMICAL METHODOLOGY AND INSTRUMENTATION TO COMPOUNDS OF BIOCHEMICAL INTEREST												
1	R01 GM30072-01 11840	BLAKE, JAMES J CHEMICAL SYNTHESIS OF PROTEINS	UNIVERSITY OF CALIFORNIA SAN FRANCISCO	SAN FRANCISCO	CALIFORNIA	82	07-83	2	55,558	70,948	MCHA	
1	R01 GM30081-01 11940	MIDLAND, M MARK STEREOSPECIFIC SYNTHESIS STEROID SIDE-CHAIN METABOLITES	UNIVERSITY OF CALIFORNIA RIVERSIDE	RIVERSIDE	CALIFORNIA	82	07-83	2	48,308	66,472	MCHA	
1	R01 GM30141-01 11940	BARTLETT, PAUL A SYNTHESIS OF POLYETHER NATURAL PRODUCTS	UNIVERSITY OF CALIFORNIA BERKELEY	BERKELEY	CALIFORNIA	82	01-83	4	96,057	121,495	MCHA	
1	R01 GM30293-01 11940	HOUK, KENDALL N STEREOSELECTIVITIES OF SYNTHETIC ORGANIC REACTIONS	UNIVERSITY OF PITTSBURGH	PITTSBURGH	PENNSYLVANIA	82	01-83	2	81,717	121,350	MCHA	
1	R01 GM30335-01 AI 11940	IRELAND, ROBERT E 3-ACYLTETRAMIC ACID ANTIBIOTIC SYNTHESIS	CALIFORNIA INSTITUTE OF TECHNOLOGY	PASADENA	CALIFORNIA	82	01-83	2	51,000	70,680	MCHA	
1	R01 GM30367-01 11940	WHITESIDES, GEORGE M ENZYMES AS CATALYSTS IN ORGANIC SYNTHESIS	HARVARD UNIVERSITY	CAMBRIDGE	MASSACHUSETTS	82	03-83	3	152,975	218,501	BNP	
1	R01 GM30369-01 11940	STREITWIESER, ANDREW ION PAIR CARBON ACIDITY	UNIVERSITY OF CALIFORNIA BERKELEY	BERKELEY	CALIFORNIA	82	04-83	2	57,605	74,021	MCHA	
2	R01 GM30528-02 11940	SNIDER, BARRY B NEW CARBON-CARBON BOND FORMING REACTIONS OF ALKENES	BRANDEIS UNIVERSITY	WALTHAM	MASSACHUSETTS	82	02-83	2	66,295	101,198	MCHA	
1	R01 GM30696-01 11940	KELLY, T ROSS HETEROCYCLIC SYNTHESIS: RUBROLONE AND OTHER PYRIDINES	BOSTON COLLEGE	CHESTNUT HILL	MASSACHUSETTS	82	04-83	2	72,755	102,036	MCHA	
1	R01 GM30735-01 11940	HOUSE, HERBERT O SPECIAL STRUCTURAL FEATURES TO CONTROL REACTIONS	GEORGIA INSTITUTE OF TECHNOLOGY	ATLANTA	GEORGIA	82	05-83	2	62,298	94,967	MCHA	
1	R01 GM30738-01 11940	SCHREIBER, STUART L THE UTILITY OF PEROXIDES IN ORGANIC SYNTHESIS	YALE UNIVERSITY	NEW HAVEN	CONNECTICUT	82	04-83	2	71,693	106,315	MCHA	
1	R01 GM30743-01 CA 11940	DE SHONG, PHILIP R NITRONE CYCLOADDITIONS/THE SYNTHESIS OF AMINO SUGARS	PENNSYLVANIA STATE UNIVERSITY UNIV PARK	UNIVERSITY PARK	PENNSYLVANIA	82	08-83	2	75,065	90,929	MCHA	
1	R01 GM30787-01 11940	BERSON, JEROME A MECHANISTIC BASES OF SYNTHETIC STRATEGY	YALE UNIVERSITY	NEW HAVEN	CONNECTICUT	82	08-83	2	62,955	100,324	MCHA	
1	R01 GM30859-01 11940	OVERMAN, LARRY E GENERAL METHODS FOR SYNTHESIS OF BIOACTIVE AZACYCLICS	UNIVERSITY OF CALIFORNIA IRVINE	IRVINE	CALIFORNIA	82	07-83	2	59,319	81,032	MCHA	
1	R01 GM30875-01 11940	COLLUM, DAVID B ASSISTED ELECTROPHILIC OPENING OF CYCLOPROPANES	CORNELL UNIVERSITY ITHACA	ITHACA	NEW YORK	82	08-83	2	63,680	89,042	MCHA	
1	R01 GM30938-01 11940	DENMARK, SCOTT E INTRAMOLECULAR NITROSOALKENE-OLEFIN CYCLOADDITIONS	UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN	URBANA	ILLINOIS	82	07-83	2	36,748	50,336	MCHA	

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BIORELATED CHEMICAL PROCESSES									
		DEVELOPMENT AND APPLICATION OF CHEMICAL METHODOLOGY AND INSTRUMENTATION TO COMPOUNDS OF BIOCHEMICAL INTEREST							
1	R01 GM31013-01 11940	MOLANDER, GARY A STEREOSPECIFIC SYNTHESES VIA ALLYLMETALLATION REACTIONS	UNIVERSITY OF COLORADO AT BOULDER	BOULDER	82 COLORADO	07-83	2	50,267	BMT 66,441
1	R01 GM31124-01 11940	SHARPLESS, K BARRY SYNTHESIS OF SACCHARIDES AND PALYTOXIN	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	CAMBRIDGE	82 MASSACHUSETTS	07-83	2	93,070	BNP 132,761
7	R01 GM31280-01 11940	GLADYSZ, JOHN A ASYMMETRIC SYNTHESIS USING CHIRAL RHENIUM COMPLEXES	UNIVERSITY OF UTAH	SALT LAKE CITY	82 UTAH	06-83	0	28,432	BMT 39,066
	** 0	*CENTERS (P50)						0	0
	** 0	PROGRAM PROJECTS (P01)						0	0
	** 67	REGULAR PROJECTS (R01)						4,232,934	5,983,516
	** 0	ALL OTHERS (P30, P41, R13, R23, R25)						0	0
	** 67	TOTALS						4,232,934	5,983,516
SUMMARY OF BIORELATED CHEMICAL PROCESSES									
	*** 0	*CENTERS (P50)						0	0
	*** 2	PROGRAM PROJECTS (P01)						615,000	873,306
	*** 262	REGULAR PROJECTS (R01)						15,935,670	22,740,183
	*** 1	ALL OTHERS (P30, P41, R13, R23, R25)						2,000	2,000
	*** 265	TOTALS						16,552,670	23,615,489
SUMMARY OF PHARMACOLOGICAL SCIENCES PROGRAM									
	**** 6	*CENTERS (P50)						2,515,020	3,574,770
	**** 7	PROGRAM PROJECTS (P01)						1,436,148	2,075,299
	**** 372	REGULAR PROJECTS (R01)						23,257,302	33,065,130
	**** 1	ALL OTHERS (P30, P41, R13, R23, R25)						2,000	2,000
	**** 386	TOTALS						27,210,470	38,717,199

T	GRANT NUMBER / PROG-AREA	INVESTIGATOR / PROJECT TITLE	GRANTEE INSTITUTION	CITY	FY / STATE	END-DATE	FUT-YRS AVAILABLE DOLLARS DIRECT	IRG SUB TOTAL
	BIOMEDICAL ENGINEERING AND INSTRUMENT DEVELOPMENT SECTION							
	MATHEMATICAL METHODS							
5	R01 GM16501-12	GARFINKEL, DAVID	UNIVERSITY OF PENNSYLVANIA		81	03-83	0	SSS
	12100	COMPUTER MODELING METHODS FOR METABOLIC SYSTEMS		PHILADELPHIA	PENNSYLVANIA		63,618	104,970
5	R01 GM18770-10	GOOD, IRVING J	VIRGINIA POLYTECHNIC INST AND ST UNIV		82	11-82	2	SSS
	12100	PROBABILITY ESTIMATION		BLACKSBURG	VIRGINIA		77,573	110,929
5	R01 GM21215-08	MILLER, RUPERT G, JR	STANFORD UNIVERSITY		82	06-83	0	SSS
	12100	ADAPTATION OF NEW STATISTICAL IDEAS FOR MEDICINE		STANFORD	CALIFORNIA		76,898	121,499
5	R01 GM25271-05	GEISSER, SEYMOUR	UNIVERSITY OF MINNESOTA OF MNPLS-ST PAUL		82	07-83	1	SSS
	12100	SAMPLE REUSE AND PREDICTIVE METHODS		MINNEAPOLIS	MINNESOTA		43,797	60,878
5	R01 GM27976-03	ROBBINS, HERBERT E	COLUMBIA UNIVERSITY		82	06-83	0	SSS
	12100	DESIGN OF CLINICAL TRIALS IN BIOSTATISTICS		NEW YORK	NEW YORK		54,586	92,632
5	R01 GM28364-02	TURNBULL, BRUCE W	CORNELL UNIVERSITY ITHACA		82	01-83	1	SSS
	12100	STATISTICAL METHODS FOR HEALTH STUDIES		ITHACA	NEW YORK		27,497	43,364
5	R01 GM28405-03	VAN RYZIN, JOHN R	COLUMBIA UNIVERSITY		82	03-83	1	SSS
	12100	STATISTICAL INFERENCE FOR CENSORED SURVIVAL DATA		NEW YORK	NEW YORK		45,828	76,808
1	R01 GM29333-01	HEWETT, JOHN E	UNIVERSITY OF MISSOURI COLUMBIA		81	12-82	0	SSS
	12100	COMPARING GROUPS WHEN RANDOMIZATION IS NOT POSSIBLE		COLUMBIA	MISSOURI		16,061	20,558
5	R01 GM29745-02	LAIRD, NAN M	HARVARD UNIVERSITY		82	08-83	1	SSS
	12100	RANDOM EFFECTS MODELS FOR LONGITUDINAL STUDIES		BOSTON	MASSACHUSETTS		47,220	83,107
1	R01 GM29999-01	HALPERIN, MAX	GEORGE WASHINGTON UNIVERSITY		82	01-83	1	SSS
	12100	GROWTH CURVE ESTIMATION WITH PROGRESSIVE CENSORING		WASHINGTON	DIST OF COL		38,450	46,051

**	0	*CENTERS (P50)	0	0
**	0	PROGRAM PROJECTS (P01)	0	0
**	10	REGULAR PROJECTS (R01)	491,528	760,796
**	0	ALL OTHERS (P30, P41, R13, R23, R25)	0	0
**	10	TOTALS	491,528	760,796

TABLE-4 RESEARCH GRANTS ACTIVE AS OF 09-30-82 BY PROGRAM AREA AND GRANT NUMBER

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BIOMEDICAL ENGINEERING AND INSTRUMENT DEVELOPMENT SECTION									
	PHYSIOLOGICAL SYSTEMS ANALYSIS								
5	P01 GM23732-06 12200	YATES, FRANCIS E CENTER FOR SYSTEMS ANALYSIS IN PATHOPHYSIOLOGY	UNIVERSITY OF SOUTHERN CALIFORNIA	LOS ANGELES	82 CALIFORNIA	04-83	1	SRC 472,701	582,118
5	R01 GM25538-03 12200	KATONA, PETER G OPTIMAL AUTOMATED CONTROL OF PHYSIOLOGICAL SYSTEMS	CASE WESTERN RESERVE UNIVERSITY	CLEVELAND	81 OHIO	07-83	0	SGYB 42,532	64,223
5	R01 GM28398-03 12200	MARSH, DONALD J OSCILLATIONS IN ARTERIAL BLOOD PRESSURE	UNIVERSITY OF SOUTHERN CALIFORNIA	LOS ANGELES	82 CALIFORNIA	08-83	0	CVB 77,411	115,899
2	R01 GM29123-03 12200	OTHMER, HANS G DYNAMIC PATTERN IN CHEMICALLY-REACTING SYSTEMS	UNIVERSITY OF UTAH	SALT LAKE CITY	82 UTAH	08-83	3	SSS 6 55,844	74,232
1	R01 GM30719-01 MH 12200	KRONAUER, RICHARD E MATHEMATICAL MODELING OF HUMAN CIRCADIAN RHYTHMS	HARVARD UNIVERSITY	CAMBRIDGE	82 MASSACHUSETTS	04-83	2	SSS 28,800	44,352

**	0	*CENTERS (P50)	0	0
**	1	PROGRAM PROJECTS (P01)	472,701	582,118
**	4	REGULAR PROJECTS (R01)	204,587	298,706
**	0	ALL OTHERS (P30, P41, R13, R23, R25)	0	0
**	5	TOTALS	677,288	880,824

T	GRANT NUMBER / PROG-AREA	INVESTIGATOR / PROJECT TITLE	GRANTEE INSTITUTION	CITY	STATE	FY	END-DATE	FUT-YRS AVAILABLE	DIRECT	IRG SUB DOLLARS TOTAL
BIOMEDICAL ENGINEERING AND INSTRUMENT DEVELOPMENT SECTION										
	BIOMATERIALS									
5	P01 GM24487-05	LYMAN, DONALD J	UNIVERSITY OF UTAH			82	01-83	1		SRC
	12300	BIOMEDICAL ENGINEERING CENTER FOR POLYMERIC IMPLANTS		SALT LAKE CITY	UTAH				329,831	477,537
2	R01 GM26698-04	LANGER, ROBERT S	MASSACHUSETTS INSTITUTE OF TECHNOLOGY			82	06-83	2		PHRA
	12300	SURGICAL IMPLANTS FOR SUSTAINED MACROMOLECULAR RELEASE		CAMBRIDGE	MASSACHUSETTS				122,260	167,481
5	R01 GM28829-03	ROSE, ROBERT M	MASSACHUSETTS INSTITUTE OF TECHNOLOGY			82	07-83	0		AFY
	12300	POLYETHYLENE BEHAVIOR IN JOINT REPLACEMENTS		CAMBRIDGE	MASSACHUSETTS				109,916	162,270
5	R01 GM29785-02	GREENWALD, A SETH	CLEVELAND RESEARCH INSTITUTE			82	12-82	0		AFY
	12300	BONE-IMPLANT INTERFACE ANALYSIS		CLEVELAND	OHIO				18,500	18,500

**	0	*CENTERS (P50)		
**	1	PROGRAM PROJECTS (P01)	0	0
**	3	REGULAR PROJECTS (R01)	329,831	477,537
**	0	ALL OTHERS (P30, P41, R13, R23, R25)	250,676	348,251
**	4	TOTALS	0	0
			580,507	825,788

TABLE-4 RESEARCH GRANTS ACTIVE AS OF 09-30-82 BY PROGRAM AREA AND GRANT NUMBER

T	GRANT NUMBER / PROG-AREA	INVESTIGATOR / PROJECT TITLE	GRANTEE INSTITUTION	CITY	FY / STATE	END-DATE	FUT-YRS AVAILABLE	IRG SUB DOLLARS DIRECT	TOTAL
	BIOMEDICAL ENGINEERING AND INSTRUMENT DEVELOPMENT SECTION MECHANICAL AND PHYSICO-CHEMICAL PROPERTIES OF TISSUES								
5	R01 GM20201-09 12320	KING, ALBERT I STRUCTURAL AND MECHANICAL PROPERTIES OF THE SPINE	WAYNE STATE UNIVERSITY	DETROIT	82 MICHIGAN	06-83	0	63,336	AFY 90,774
5	R01 GM26395-03 12320	PERRY, JACQUELIN THE DYNAMICS OF EMG-FORCE-MOVEMENT RELATIONSHIPS	RANCHO LOS AMIGOS HOSPITAL	DOWNEY	81 CALIFORNIA	09-82	0	83,101	AFY 99,504
2	R01 GM26608-03A1 12320	LIU, Y KING THE TRAUMATOLOGY OF THE HEAD AND SPINE	UNIVERSITY OF IOWA	IOWA CITY	82 IOWA	02-83	2	84,493	AFY 112,806
5	R01 GM28827-03 12320	PIZIALI, ROBERT L THE MECHANICS OF HUMAN BONE AND LONG BONES	STANFORD UNIVERSITY	STANFORD	82 CALIFORNIA	06-83	0	51,677	AFY 80,646
5	R01 GM29280-02 12320	GOLDSMITH, WERNER HEAD/NECK/UPPER TORSO RESPONSE TO DYNAMIC LOADING	UNIVERSITY OF CALIFORNIA BERKELEY	BERKELEY	82 CALIFORNIA	06-83	3	42,009	AFY 59,611

**	0	*CENTERS (P50)	0	0
**	0	PROGRAM PROJECTS (P01)	0	0
**	5	REGULAR PROJECTS (R01)	324,616	443,341
**	0	ALL OTHERS (P30, P41, R13, R23, R25)	0	0
**	5	TOTALS	324,616	443,341

T	GRANT NUMBER / PROG-AREA	INVESTIGATOR / PROJECT TITLE	GRANTEE INSTITUTION	CITY	FY / STATE	END-DATE	FUT-YRS AVAILABLE	DOLLARS DIRECT	IRG SUB / DOLLARS TOTAL
BIOMEDICAL ENGINEERING AND INSTRUMENT DEVELOPMENT SECTION									
	PROSTHETICS								
5	R01 GM24300-05	NELSON, RONALD J	LOS ANGELES COUNTY HARBOR-UCLA MED CTR		82	02-83	1		SB
	12350	DEVELOPMENT OF A MICROPOROUS TRACHEAL PROSTHESIS		TORRANCE	CALIFORNIA			70,318	89,665
1	R01 GM30838-01	ROSCOE, DENNIS D	CASE WESTERN RESERVE UNIVERSITY		82	08-83	2		ORTH
	NS 12350	MYOELECTRIC CONTROLLER FOR ORTHOTIC/PROSTHETIC SYSTEMS		CLEVELAND	OHIO			74,243	97,569

**	0	*CENTERS (P50)		
**	0	PROGRAM PROJECTS (P01)	0	0
**	2	REGULAR PROJECTS (R01)	0	0
**	0	ALL OTHERS (P30, P41, R13, R23, R25)	144,561	187,234
**	2	TOTALS	0	0
			144,561	187,234

TABLE-4 RESEARCH GRANTS ACTIVE AS OF 09-30-82 BY PROGRAM AREA AND GRANT NUMBER

T	GRANT NUMBER / PROG-AREA	INVESTIGATOR / PROJECT TITLE	GRANTEE INSTITUTION	CITY	FY / STATE	END-DATE	FUT-YRS AVAILABLE	DIRECT	IRG SUB DOLLARS TOTAL
		BIOMEDICAL ENGINEERING AND INSTRUMENT DEVELOPMENT SECTION							
		PHYSIOLOGICAL INSTRUMENTATION							
5	P01 GM17940-13 / 12400	MEINDL, JAMES D / BME CENTER FOR INTEGRATED ELECTRONICS IN MEDICINE	STANFORD UNIVERSITY	STANFORD	82 / CALIFORNIA	08-83	0	582,000	SSS 983,580
5	R01 GM22952-06 / 12400	JANATA, JIRI / CHEMICALLY SENSITIVE FIELD EFFECT TRANSISTORS	UNIVERSITY OF UTAH	SALT LAKE CITY	82 / UTAH	03-83	1	67,900	SB 98,455
5	R01 GM24104-03 / 12400	JARZEMBSKI, WILLIAM B / CURRENT PATHWAYS IN TISSUE DUE TO ELECTRICAL STIMULUS	TEXAS TECH UNIVERSITY	LUBBOCK	81 / TEXAS	12-82	0	27,798	SGYB 35,114
2	R01 GM25810-04 / 12400	LANGER, ROBERT S / A SYSTEM FOR HEPARIN REMOVAL	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	CAMBRIDGE	82 / MASSACHUSETTS	12-82	2	89,849	SB 132,289
5	R01 GM26187-03 / 12400	MARTIN, ROY W / AIR EMBOLI DETECTION BY ULTRASONIC CATHETER METHODS	UNIVERSITY OF WASHINGTON	SEATTLE	81 / WASHINGTON	09-82	0	51,810	SGYB 69,085
5	R01 GM26508-03 / 12400	JANATA, JIRI / IMMUNOCHEMICALLY SENSITIVE FIELD EFFECT TRANSISTOR	UNIVERSITY OF UTAH	SALT LAKE CITY	81 / UTAH	03-83	0	39,653	SGYB 58,290
5	R01 GM28213-03 / 12400	SWANSON, CURTIS J / LIQUID CRYSTAL THERMOGRAPHY OF CELL HEAT PRODUCTION	WAYNE STATE UNIVERSITY	DETROIT	82 / MICHIGAN	06-83	0	11,963	RNM 19,175
5	R01 GM28882-02 / 12400	MEYERHOFF, MARK E / POLYMER MEMBRANE BASED POTENTIOMETRIC GAS SENSORS	UNIVERSITY OF MICHIGAN AT ANN ARBOR	ANN ARBOR	82 / MICHIGAN	03-83	1	38,145	BMT 57,833
5	R01 GM28947-02 / 12400	LIU, CHUNG-CHIUN / PALLADIUM-PALLADIUM OXIDE MINIATURE PH ELECTRODE	CASE WESTERN RESERVE UNIVERSITY	CLEVELAND	82 / OHIO	03-83	0	41,166	SB 62,161

**	0	*CENTERS (P50)	0	0
**	1	PROGRAM PROJECTS (P01)	582,000	983,580
**	8	REGULAR PROJECTS (R01)	368,284	532,402
**	0	ALL OTHERS (P30, P41, R13, R23, R25)	0	0
**	9	TOTALS	950,284	1,515,982

T	GRANT NUMBER / PROG-AREA	INVESTIGATOR / PROJECT TITLE	GRANTEE INSTITUTION	CITY	FY / STATE	END-DATE	FUT-YRS AVAILABLE DIRECT	IRG SUB DOLLARS TOTAL
BIOMEDICAL ENGINEERING AND INSTRUMENT DEVELOPMENT SECTION								
	BIOMEDICAL INFORMATION PROCESSING							
5	R01 GM22023-06	COOPER, JEFFREY B	MASSACHUSETTS GENERAL HOSPITAL		81	09-82	0	SGYA
	12500	NEW APPROACHES TO ANESTHESIA MANAGEMENT		BOSTON	MASSACHUSETTS		86,757	119,495
**	0	*CENTERS (P50)						
**	0	PROGRAM PROJECTS (P01)					0	0
**	1	REGULAR PROJECTS (R01)					0	0
**	0	ALL OTHERS (P30, P41, R13, R23, R25)					86,757	119,495
**	1	TOTALS					0	0
							86,757	119,495

TABLE-4 RESEARCH GRANTS ACTIVE AS OF 09-30-82 BY PROGRAM AREA AND GRANT NUMBER

T	GRANT NUMBER / PROG-AREA	INVESTIGATOR / PROJECT TITLE	GRANTEE INSTITUTION	CITY	FY / STATE	END-DATE	FUT-YRS AVAILABLE	DOLLARS DIRECT	IRG / SUB / DOLLARS TOTAL
BIOMEDICAL ENGINEERING AND INSTRUMENT DEVELOPMENT SECTION									
ANALYTICAL AND SEPARATION TECHNIQUES									
2	R01 GM10851-25 12820	GIDDINGS, J CALVIN BIOMEDICAL SEPARATIONS: FIELD-FLOW FRACTIONATION	UNIVERSITY OF UTAH	SALT LAKE CITY	82 UTAH	01-83	4	89,069	BMT 127,587
5	R01 GM13326-15 12820	PARDUE, HARRY L INSTRUMENTATION FOR FAST CLINICAL ANALYSES	PURDUE UNIVERSITY WEST LAFAYETTE	WEST LAFAYETTE	82 INDIANA	11-82	0	68,386	BMT 112,151
5	R01 GM14569-14 12820	HARRISON, WILLARD W BIOLOGICAL TRACE ANALYSIS BY HOLLOW CATHODE GLOW	UNIVERSITY OF VIRGINIA CHARLOTTESVILLE	CHARLOTTESVILLE	81 VIRGINIA	07-83	0	43,455	BMT 60,175
2	R01 GM15847-13 12820	KARGER, BARRY L STUDIES IN HIGH PERFORMANCE LIQUID CHROMATOGRAPHY	NORTHEASTERN UNIVERSITY	BOSTON	82 MASSACHUSETTS	11-82	2	92,045	SSS 123,919
5	R01 GM16133-14 12820	UPDIKE, STUART J IMMOBILIZED ENZYMES TO ALTER AND ANALYZE METABOLISM	UNIVERSITY OF WISCONSIN MADISON	MADISON	81 WISCONSIN	06-83	0	53,095	PBC 74,067
5	R01 GM19478-07 12820	KARMEN, ARTHUR MICROANALYSIS USING GAS CHROMATOGRAPHY	YESHIVA UNIVERSITY	NEW YORK	81 NEW YORK	11-82	0	56,104	BMT 102,633
2	R01 GM20946-08 12820	DAVIS, FRANK F NONIMMUNOGENIC ENZYMES FOR THERAPEUTIC USE	RUTGERS THE STATE UNIV NEW BRUNSWICK	NEW BRUNSWICK	82 NEW JERSEY	11-82	2	111,088	ET 161,019
5	R01 GM20993-08 12820	HORVATH, CSABA G LIQUID CHROMATOGRAPHY OF BIOLOGICAL SUBSTANCES	YALE UNIVERSITY	NEW HAVEN	82 CONNECTICUT	01-83	0	61,966	MCHB 97,906
5	R01 GM22311-07 12820	CHRISTIAN, GARY D CARCINOGEN DETECTION IN HUMANS BY VIDEO FLUOROMETRY	UNIVERSITY OF WASHINGTON	SEATTLE	82 WASHINGTON	08-83	1	62,317	BMT 83,505
5	R01 GM22679-07 12820	BROWN, HARRY D MICROCALORIMETRIC DEFINITION OF CLINICAL REACTIONS	RUTGERS THE STATE UNIV NEW BRUNSWICK	NEW BRUNSWICK	81 NEW JERSEY	03-83	0	48,874	BBCA 73,944
2	R01 GM22940-07 12820	NGUYEN-HUU, X AUTOMATIC ANALYSIS OF 2-DIMENSIONAL ELECTROPHEROGRAMS	UNIVERSITY OF CALIFORNIA SAN DIEGO	LA JOLLA	82 CALIFORNIA	07-83	2	97,250	SSS 1 120,337
2	R01 GM24349-04 12820	NOVOTNY, MILOS V IMPROVE BIOCHEM HIGH-PERFORMANCE LIQUID CHROMATOGRAPHY	INDIANA UNIVERSITY BLOOMINGTON	BLOOMINGTON	82 INDIANA	11-82	2	68,525	BMT 88,072
2	R01 GM25308-05 12820	RECHNITZ, GARRY A BIOANALYSIS WITH SELECTIVE MEMBRANE ELECTRODES	UNIVERSITY OF DELAWARE	NEWARK	82 DELAWARE	06-83	4	53,219	BMT 84,086
5	R01 GM25312-03 12820	RECHNITZ, GARRY A BIO-SELECTIVE ELECTRODES USING LIVING BACTERIAL CELLS	UNIVERSITY OF DELAWARE	NEWARK	81 DELAWARE	11-82	0	22,486	BMT 32,155
5	R01 GM25431-05 12820	REGNIER, FRED E HIGH PERFORMANCE LIQUID CHROMATOGRAPHY OF PROTEINS	PURDUE UNIVERSITY WEST LAFAYETTE	WEST LAFAYETTE	82 INDIANA	06-83	0	68,446	SSS 90,033
2	R01 GM26809-04 12820	ROY, RABINDRA N PH MEASUREMENT STANDARDS OF BLOOD IN ISOTONIC SALINE	DRURY COLLEGE	SPRINGFIELD	82 MISSOURI	06-83	2	11,040	BMT 15,317

BIOMEDICAL ENGINEERING AND INSTRUMENT DEVELOPMENT SECTION
ANALYTICAL AND SEPARATION TECHNIQUES

GRANT NUMBER / PROG-AREA	INVESTIGATOR / PROJECT TITLE	GRANTEE INSTITUTION	CITY	STATE	FY	END-DATE	FUT-YRS AVAILABLE DIRECT	IRG SUB DOLLARS TOTAL
5 R01 GM26935-04 12820	ANDERSEN, NIELS H ASSAY METHODS FOR ARACHIDONIC ACID METABOLITES	UNIVERSITY OF WASHINGTON	SEATTLE	WASHINGTON	82	06-83	0 60,092	BMT 80,523
5 R01 GM28112-03 12820	WEBER, STEPHEN G CATALYTIC PHOTOELECTROCHEMICAL IMMUNOASSAY	UNIVERSITY OF PITTSBURGH	PITTSBURGH	PENNSYLVANIA	82	06-83	0 34,980	SSS 52,650
5 R01 GM28306-03 12820	ANDERSON, C WILLIAM A HOMOGENEOUS VOLTAMMETRIC IMMUNOASSAY	DUKE UNIVERSITY	DURHAM	NORTH CAROLINA	82	08-83	0 37,558	SSS 56,337
5 R01 GM28576-02 12820	FUNK, MAX O ANALYSIS OF THE PEROXIDES OF ARACHIDONATE METABOLISM	UNIVERSITY OF TOLEDO	TOLEDO	OHIO	82	11-82	0 13,598	SSS 20,560
1 R01 GM28783-01 12820	IRVING, CHARLES S ASSESSMENT OF ALTERNATIVES IN 13C ISOTOPIC MEASUREMENTS	BAYLOR COLLEGE OF MEDICINE	HOUSTON	TEXAS	81	05-83	1 40,160	SSS 54,618
1 R01 GM30205-01 12820	LEONARD, EDWARD F TECHNOLOGY OF THERAPEUTIC MEMBRANE PLASMAPHERESIS	COLUMBIA UNIVERSITY	NEW YORK	NEW YORK	82	01-83	2 79,639	SB 124,256

**	0	*CENTERS (P50)		
**	0	PROGRAM PROJECTS (P01)	0	0
**	22	REGULAR PROJECTS (R01)	0	0
**	0	ALL OTHERS (P30, P41, R13, R23, R25)	1,273,392	1,835,850
**	22	TOTALS	0	0
			1,273,392	1,835,850

TABLE-4 RESEARCH GRANTS ACTIVE AS OF 09-30-82 BY PROGRAM AREA AND GRANT NUMBER

T	GRANT NUMBER / PROG-AREA	INVESTIGATOR / PROJECT TITLE	GRANTEE INSTITUTION	CITY	FY / STATE	END-DATE	FUT-YRS AVAILABLE DIRECT	IRG SUB DOLLARS TOTAL
BIOMEDICAL ENGINEERING AND INSTRUMENT DEVELOPMENT SECTION								
SPECTROSCOPIC TECHNIQUES								
5	R01 GM05472-24 12840	BIEMANN, KLAUS MASS SPECTROMETRIC SEQUENCING OF PROTEINS	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	CAMBRIDGE	82 MASSACHUSETTS	12-82	3 144,724	SSS 199,276
5	R01 GM08521-22 12840	GRANT, DAVID M CARBON-13 MAGNETIC RESONANCE--METHODS AND THEORY	UNIVERSITY OF UTAH	SALT LAKE CITY	82 UTAH	05-83	0 77,850	BBCB 111,758
5	R01 GM11373-20 12840	WINEFORDNER, JAMES D MOLECULAR SPECTROMETRIC METHODS FOR DRUGS	UNIVERSITY OF FLORIDA	GAINESVILLE	82 FLORIDA	08-83	3 119,908	SSS 169,215
2	R01 GM12592-18 12840	HOCHSTRASSER, ROBIN M PHOTOPROCESSES IN THE ORGANIC SOLID STATE	UNIVERSITY OF PENNSYLVANIA	PHILADELPHIA	82 PENNSYLVANIA	01-83	4 115,767	BBCA 156,566
2	P01 GM13901-17 12840	HORNING, EVAN C ANALYTICAL BIOCHEMISTRY FOR HUMAN STUDIES	BAYLOR COLLEGE OF MEDICINE	HOUSTON	82 TEXAS	07-83	2 276,601	SSS 356,557
2	R01 GM16609-14 12840	MC LAFFERTY, FRED W MASS SPECTROMETRY IN BIOMEDICAL RESEARCH	CORNELL UNIVERSITY ITHACA	ITHACA	82 NEW YORK	12-82	4 179,069	BMT 236,298
2	R01 GM20102-10 12840	NGUYEN-HUU, XUONG COMPUTER CONTROLLED MULTIREFLECTION DIFFRACTOMETER	UNIVERSITY OF CALIFORNIA SAN DIEGO	LA JOLLA	82 CALIFORNIA	07-83	0 138,045	BBCB 175,794
5	R01 GM21584-08 12840	MC CLOSKEY, JAMES A MASS SPECTROMETRY OF NUCLEIC ACIDS AND THEIR ANALOGS	UNIVERSITY OF UTAH	SALT LAKE CITY	82 UTAH	12-82	1 137,088	SSS 198,778
5	R01 GM22517-07 12840	PECORA, ROBERT DYNAMIC LIGHT SCATTERING FROM BIOLOGICAL SYSTEMS	STANFORD UNIVERSITY	STANFORD	82 CALIFORNIA	03-83	0 41,283	BBCB 60,864
5	R01 GM23567-05 12840	NAFIE, LAURENCE A VIBRATIONAL OPTICAL ACTIVITY IN PEPTIDE MOLECULES	SYRACUSE UNIVERSITY AT SYRACUSE	SYRACUSE	82 NEW YORK	07-83	1 49,355	BBCB 75,524
5	R01 GM23765-05 12840	ROBINSON, G WILSE SUBNANUSECOND PRIMARY EVENTS IN BIOLOGY	TEXAS TECH UNIVERSITY	LUBBOCK	82 TEXAS	06-83	1 35,820	BBCA 45,491
2	R01 GM24031-06 12840	VESTAL, MARVIN L CROSSED-BEAM LC-MS FOR INVOLATILE BIOLOGICAL SAMPLES	UNIVERSITY OF HOUSTON AT HOUSTON	HOUSTON	82 TEXAS	11-82	2 86,874	BMT 102,181
2	R01 GM24032-06 12840	STRYER, LUBERT OPTICAL STUDIES OF PROTEIN STRUCTURE AND FUNCTION	STANFORD UNIVERSITY	STANFORD	82 CALIFORNIA	03-83	4 85,000	SSS 113,710
5	R01 GM24918-05 12840	DEUTSCH, MARTIN BIOLOGICAL CRYSTALLOGRAPHY, A PRECISION AREA DETECTOR	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	CAMBRIDGE	82 MASSACHUSETTS	03-83	1 78,386	BBCB 122,531
5	R01 GM25592-03 12840	CAMPBELL, IAIN M RADIOGAS CHROMATOGRAPH/QUADRUPOLE MASS SPECTROMETY	UNIVERSITY OF PITTSBURGH	PITTSBURGH	81 PENNSYLVANIA	12-82	0 49,701	BMT 75,546
2	R01 GM26096-05 12840	MACFARLANE, RONALD D BIOMEDICAL USE OF PLASMA DESORPTION MASS SPECTROMETRY	TEXAS AGRI AND MECH UNIV COLLEGE STATION	COLLEGE STATION	82 TEXAS	06-83	2 122,245	BMT 145,748

BIOMEDICAL ENGINEERING AND INSTRUMENT DEVELOPMENT SECTION
SPECTROSCOPIC TECHNIQUES

T	GRANT NUMBER / PROG-AREA	INVESTIGATOR / PROJECT TITLE	GRANTEE INSTITUTION	CITY	FY / STATE	END-DATE	FUT-YRS AVAILABLE	DIRECT	IRG	SUB	TOTAL
5	R01 GM27029-13 12840	RINEHART, KENNETH L, JR HIGH RESOLUTION MASS SPECTRA OF BIOORGANIC COMPOUNDS	UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN	URBANA	82 ILLINOIS	04-83	1	75,607	SSS		107,664
5	R01 GM27039-03 12840	MC IVER, ROBERT T, JR FOURIER TRANSFORM MASS SPECTROMETRY	UNIVERSITY OF CALIFORNIA IRVINE	IRVINE	82 CALIFORNIA	11-82	0	44,100	SSS		57,771
5	R01 GM27364-02 12840	FORSYTH, JAMES M INSTRUMENTATION FOR FAST BIOSTRUCTURAL KINETIC STUDIES	UNIVERSITY OF ROCHESTER	ROCHESTER	81 NEW YORK	01-83	0	90,461	SSS		134,898
2	R01 GM27665-04 12840	HYDE, JAMES S DEVELOPMENT OF BIOMEDICAL ESR INSTRUMENTATION	MEDICAL COLLEGE OF WISCONSIN	MILWAUKEE	82 WISCONSIN	06-83	2	204,911	BBCB		269,735
5	R01 GM28254-03 12840	ENKE, CHRISTIE G STRUCTURE DETERMINATION BY TRIPLE QUAD MASS SPECTROMETRY	MICHIGAN STATE UNIVERSITY	EAST LANSING	82 MICHIGAN	06-83	0	46,096	SSS		64,995
5	R01 GM28291-03 12840	VESTAL, MARVIN L PROTEIN SEQUENCING BY LIQUID FLOW MASS SPECTROMETRY	UNIVERSITY OF HOUSTON AT HOUSTON	HOUSTON	82 TEXAS	08-83	0	34,911	SSS		45,384
5	R01 GM28484-02 12840	MORRIS, MICHAEL D TIME/SPACE RESOLVED THERMAL BLOOMING SPECTROSCOPY	UNIVERSITY OF MICHIGAN AT ANN ARBOR	ANN ARBOR	82 MICHIGAN	12-82	1	29,793	SSS		47,073
5	R01 GM28581-02 12840	MEUZELAAR, HENDRIK L CELL AND TISSUE PROFILING BY AUTOMATED PYROLYSIS-MS	UNIVERSITY OF UTAH	SALT LAKE CITY	82 UTAH	02-83	1	68,340	SSS		96,168
5	R01 GM29151-02 12840	VESTAL, MARVIN L LASER DESPORTION MASS SPECTROMETRY	UNIVERSITY OF HOUSTON AT HOUSTON	HOUSTON	82 TEXAS	03-83	1	48,730	SSS		63,349
5	R01 GM29276-06 12840	ZARE, RICHARD N APPLICATIONS OF LASER FLUORIMETRY TO BIOMEDICAL ANALYSIS	STANFORD UNIVERSITY	STANFORD	82 CALIFORNIA	06-83	1	63,730	BMT		92,782
1	R01 GM29336-01 12840	ISENBERG, IRVIN PULSE FLUOROMETRY	OREGON STATE UNIVERSITY	CORVALLIS	82 OREGON	01-83	2	44,260	BBCA		57,538
1	R01 GM30012-01A1 12840	PEISACH, JACK PULSED EPR SPECTROSCOPY OF METALLOPROTEINS	YESHIVA UNIVERSITY	NEW YORK	82 NEW YORK	07-83	2	249,576	SSS		294,741
1	R01 GM30240-01 12840	COTTON, THERESE M SURFACE ENHANCED RAMAN STUDIES OF BIOMOLECULES	ILLINOIS INSTITUTE OF TECHNOLOGY	CHICAGO	82 ILLINOIS	01-83	2	122,340	BMT		136,028
1	P01 GM30287-01 NS 12840	SHULMAN, ROBERT G IN VIVO NMR STUDIES OF BRAIN, LIVER AND TUMORS	YALE UNIVERSITY	NEW HAVEN	82 CONNECTICUT	01-83	2	637,778	SSS		746,022
1	R01 GM30331-01 HL 12840	ACKERMAN, JOSEPH J SURFACE COIL NMR BIOCHEMISTRY OF IN VIVO TISSUE	WASHINGTON UNIVERSITY	SAINT LOUIS	82 MISSOURI	05-83	2	147,711	SSS		216,186
1	R01 GM30604-01 12840	WILKINS, CHARLES L HIGH FIELD FT MASS SPECTROMETRY FOR BIOMOLECULES	UNIVERSITY OF CALIFORNIA RIVERSIDE	RIVERSIDE	82 CALIFORNIA	05-83	2	329,287	SSS		356,883

TABLE-4 RESEARCH GRANTS ACTIVE AS OF 09-30-82 BY PROGRAM AREA AND GRANT NUMBER

T	GRANT NUMBER / PROG-AREA	INVESTIGATOR / PROJECT TITLE	GRANTEE INSTITUTION	CITY	FY / STATE	END-DATE	FUT-YRS AVAILABLE	IRG SUB DOLLARS DIRECT	TOTAL
BIOMEDICAL ENGINEERING AND INSTRUMENT DEVELOPMENT SECTION									
		SPECTROSCOPIC TECHNIQUES							
1	R01 GM30605-01 12840	STANDING, KENNETH G TIME-OF-FLIGHT MASS SPECTROMETRY OF LARGE BIOMOLECULES	UNIVERSITY OF MANITOBA	WINNIPEG	82 CANADA	05-83	2	59,068	SSS 59,068
1	R01 GM30741-01 12840	ASHER, SANFORD A UV RESONANCE RAMAN STUDIES OF PROTEIN STRUCTURE	UNIVERSITY OF PITTSBURGH	PITTSBURGH	82 PENNSYLVANIA	05-83	2	109,175	BBCB 129,026
7	R01 GM31992-01 12840	CHANCE, BRITTON METALLOENZYMES, PROTEINS, AND MODELS	UNIVERSITY CITY SCIENCE CENTER	PHILADELPHIA	82 PENNSYLVANIA	01-83	1	86,149	SSS 149,455
								0	0
**	0	NCENTERS (P50)						914,379	1,102,579
**	2	PROGRAM PROJECTS (P01)						3,315,360	4,368,024
**	33	REGULAR PROJECTS (R01)						0	0
**	0	ALL OTHERS (P30, P41, R13, R23, R25)						4,229,739	5,470,603
**	35	TOTALS							

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	BIOMEDICAL ENGINEERING AND INSTRUMENT DEVELOPMENT SECTION							
	SHARED INSTRUMENTATION							
5	P41 GM27405-03	KAPLAN, JOHN E	ALBANY MEDICAL COLLEGE		81	01-83	0	SSS
	12900	SCINTIGRAPHIC EVALUATION OF PHYSIOLOGICAL EVENTS		ALBANY	NEW YORK		15,000	22,200
5	P41 GM27408-03	KAHAN, LAWRENCE	UNIVERSITY OF WISCONSIN MADISON		81	08-83	0	SSS
	12900	CELL SORTING CORE FACILITY		MADISON	WISCONSIN		15,000	21,450
5	P41 GM27431-03	HORTON, DEREK	OHIO STATE UNIVERSITY		81	12-82	0	SSS
	12900	NMR SPECTROMETER FOR CORE USER GROUP		COLUMBUS	OHIO		13,555	18,570
5	P41 GM27433-03	KRAUS, GEORGE A	IOWA STATE UNIVERSITY OF SCIENCE & TECH		81	08-83	0	SSS
	12900	NIGMS SHARED INSTRUMENTATION PROGRAM--200 MHZ NMR		AMES	IOWA		22,171	26,505
5	P41 GM27543-02	MAGUIRE, MICHAEL	CASE WESTERN RESERVE UNIVERSITY		82	11-82	1	SSS
	12900	APPLICATION FOR AN ELECTRON MICROSCOPE		CLEVELAND	OHIO		10,870	16,414
5	P41 GM27558-03	WILLIAMS, CHARLES H, JR	UNIVERSITY OF MICHIGAN AT ANN ARBOR		82	12-82	0	SSS
	12900	SHARED FACILITY FOR PROTEIN SEQUENCING		ANN ARBOR	MICHIGAN		10,752	14,225
5	P41 GM29786-03	EISENBERG, DAVID S	UNIVERSITY OF CALIFORNIA LOS ANGELES		82	08-83	0	SSS
	12900	LA COMPUTER GRAPHICS TERMINAL FOR MOLECULAR BIOLOGY		LOS ANGELES	CALIFORNIA		14,550	20,181

**	0	*CENTERS (P50)		
**	0	PROGRAM PROJECTS (P01)	0	0
**	0	REGULAR PROJECTS (R01)	0	0
**	7	ALL OTHERS (P30, P41, R13, R23, R25)	0	0
**	7	TOTALS	101,898	139,545
			101,898	139,545

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BIOMEDICAL ENGINEERING AND INSTRUMENT DEVELOPMENT SECTION									
ULTRASONIC IMAGING AND EFFECTS									
5	R01 GM08209-16 12910	NYBORG, WESLEY L BIOPHYSICAL BASIS FOR THRESHOLDS IN BIO-ULTRASOUND	UNIVERSITY OF VERMONT & ST AGRIC COLLEGE	BURLINGTON	82 VERMONT	06-83	0	106,704	RNM 157,396
5	R01 GM09933-20 12910	CARSTENSEN, EDWIN L INTERACTION OF ULTRASCUND WITH BIOLOGICAL MATERIAL	UNIVERSITY OF ROCHESTER	ROCHESTER	82 NEW YORK	04-83	2	70,540	RNM 119,780
2	R01 GM12281-19 12910	DUNN, FLOYD ULTRASONIC ABSORPTION BY BIOLOGICAL MATERIALS	UNIVERSITY OF ILLINOIS	URBANA-CHAMPAIGN URBANA	82 ILLINOIS	08-83	4	68,512	RNM 93,745
5	R01 GM20661-09 12910	SIKOV, MELVIN R EFFECT OF EXPOSURE OF THE PRENATAL RAT TO ULTRASOUND	PACIFIC NORTHWEST LABORATORIES	RICHLAND	82 WASHINGTON	03-83	1	98,305	RNM 170,628
5	R01 GM22338-06 12910	GREENFIELD, MOSES A IN VIVO BONE STUDY USING ULTRASOUND/PHOTON ABSORPTION	UNIVERSITY OF CALIFORNIA	LOS ANGELES LOS ANGELES	82 CALIFORNIA	11-82	0	25,181	RNM 32,987
5	R01 GM22680-08 12910	MILLER, MORTON W BIOPHYSICAL BASES OF PULSED ULTRASOUND BIOEFFECTS	UNIVERSITY OF ROCHESTER	ROCHESTER	82 NEW YORK	04-83	2	88,782	RNM 154,481
5	R01 GM24994-04 12910	O'BRIEN, WILLIAM D, JR ULTRASONIC PROPAGATION PROPERTIES IN INTACT TISSUE	UNIVERSITY OF ILLINOIS	URBANA-CHAMPAIGN URBANA	81 ILLINOIS	12-82	0	96,636	RAD 126,206
5	R01 GM26850-03 12910	LIZZI, FREDERIC L ADVANCED CLINICAL ULTRASONIC TISSUE CHARACTERIZATION	RIVERSIDE RESEARCH INSTITUTE	NEW YORK	82 NEW YORK	01-83	1	218,412	RNM 285,504
5	R01 GM27755-03 12910	RILEY, WARD A, JR OPTICAL DIFFRACTION ANALYSIS OF PULSED ULTRASOUND	WAKE FOREST UNIVERSITY	WINSTON-SALEM	82 NORTH CAROLINA	06-83	0	55,620	RNM 74,586
5	R01 GM28253-03 12910	FRIZZELL, LEON A ULTRASONICALLY INDUCED CAVITATION IN TISSUES	UNIVERSITY OF ILLINOIS	URBANA-CHAMPAIGN URBANA	82 ILLINOIS	08-83	0	61,146	SSS 87,072
5	R01 GM28562-02 12910	EDMONDS, PETER D MECHANISMS OF BIOEFFECTS OF ULTRASONIC RADIATION	SRI INTERNATIONAL	MENLO PARK	82 CALIFORNIA	01-83	1	72,083	RNM 139,458
1	R01 GM29106-01 FD 12910	DROST, CORNELIS J ULTRASOUND INTENSITY METER	CORNELL UNIVERSITY ITHACA	ITHACA	81 NEW YORK	03-83	0	51,569	RNM 76,378
5	R01 GM29153-02 12910	FRANKLIN, DEAN ULTRASONIC INSTRUMENTATION DEVELOPMENT	UNIVERSITY OF MISSOURI COLUMBIA	COLUMBIA	82 MISSOURI	03-83	1	63,807	RNM 84,739
5	R01 GM29680-02 12910	VON RAMM, OLAF T HIGH-SPEED ULTRASOUND IMAGING	DUKE UNIVERSITY	DURHAM	82 NORTH CAROLINA	06-83	1	90,047	SSS 135,071
1	R01 GM30419-01 12910	APFEL, ROBERT E CELL CHARACTERIZATION AND DEFORMATION WITH ULTRASOUND	YALE UNIVERSITY	NEW HAVEN	82 CONNECTICUT	04-83	2	56,961	RNM 83,934
1	R01 GM30481-01 12910	O'BRIEN, WILLIAM D, JR THEORETICAL ULTRASONIC DOSIMETRY	UNIVERSITY OF ILLINOIS	URBANA-CHAMPAIGN URBANA	82 ILLINOIS	04-83	2	26,641	RNM 35,181

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BIOMEDICAL ENGINEERING AND INSTRUMENT DEVELOPMENT SECTION												
ULTRASONIC IMAGING AND EFFECTS												
5	R01 GM30521-02	KREMKAU, FREDERICK W	YALE UNIVERSITY	NEW HAVEN	CONNECTICUT	82	12-82	1	RNM		52,064	78,781
	12910	BIOMOLECULAR ABSORPTION OF ULTRASOUND										
1	R01 GM30522-01	ZAGZEBSKI, JAMES A	UNIVERSITY OF WISCONSIN MADISON	MADISON	WISCONSIN	82	04-83	2	RNM		81,949	103,010
	12910	ULTRASONIC SCATTER IN SOFT TISSUE PHANTOMS										
1	R01 GM30593-01	GOSS, STEPHEN A	INDIANAPOLIS CENTER FOR ADVANCED RES	INDIANAPOLIS	INDIANA	82	06-83	2	RNM		35,172	62,703
	12910	NONLINEAR ULTRASOUND PROPAGATION IN BIOLOGICAL TISSUE										
1	R01 GM30890-01	GREEN, PHILIP S	SRI INTERNATIONAL	MENLO PARK	CALIFORNIA	82	07-83	2	RNM		43,865	84,994
	12910	ORTHOGRAPHIC ULTRASONIC TRANSMISSION IMAGING										
1	R01 GM31088-01	FORSTER, FRED K	UNIVERSITY OF WASHINGTON	SEATTLE	WASHINGTON	82	07-83	2	RNM		111,422	141,363
	12910	ULTRASONIC ASSESSMENT OF WOUND HEALING AND BURN TRAUMA										

**	0	*CENTERS (P50)	0	0
**	0	PROGRAM PROJECTS (P01)	0	0
**	21	REGULAR PROJECTS (R01)	1,575,418	2,327,997
**	0	ALL OTHERS (P30, P41, R13, R23, R25)	0	0
**	21	TOTALS	1,575,418	2,327,997

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BIOMEDICAL ENGINEERING AND INSTRUMENT DEVELOPMENT SECTION									
MICROSCOPY AND MICROANALYSIS									
5	R01 GM10422-20 12930	SALPETER, MIRIAM M HIGH RESOLUTION AUTORADIOGRAPHY	CORNELL UNIVERSITY ITHACA	ITHACA	82 NEW YORK	11-82	1	84,520	CBY 132,884
5	R01 GM14237-15 12930	SLAYTER, HENRY S ELECTRON MICROSCOPY OF MACROMOLECULAR STRUCTURES	SIDNEY FARBER CANCER INSTITUTE	BOSTON	82 MASSACHUSETTS	03-83	1	55,679	CBY 92,224
2	R01 GM18639-11 12930	STAEHELIN, L ANDREW STRUCTURE AND FUNCTION OF ULTRARAPIDLY FROZEN CELLS	UNIVERSITY OF COLORADO AT BOULDER	BOULDER	82 COLORADO	03-83	4	92,438	CTY 128,951
2	R01 GM23325-07 12930	GLAESER, ROBERT M BIOLOGICAL STRUCTURE ANALYSIS BY ELECTRON MICROSCOPY	UNIVERSITY OF CALIFORNIA BERKELEY	BERKELEY	82 CALIFORNIA	06-83	3	264,558	SSS 3 371,438
5	R01 GM24237-05 12930	BEER, MICHAEL ELECTRON MICROSCOPIC TECHNIQUES FOR MEMBRANE STRUCTURE	JOHNS HOPKINS UNIVERSITY	BALTIMORE	82 MARYLAND	12-82	1	56,396	BBCB 84,094
5	R01 GM24314-06 12930	MORRISON, GEORGE H ION MICROSCOPY IN BIOLOGY AND MEDICINE	CORNELL UNIVERSITY ITHACA	ITHACA	82 NEW YORK	06-83	0	49,714	SSS 72,972
5	R01 GM25826-04 12930	QUATE, CALVIN F ACOUSTIC MICROSCOPY FOR BIOMEDICAL APPLICATIONS	STANFORD UNIVERSITY	STANFORD	82 CALIFORNIA	11-82	0	100,574	SSS 158,907
2	R01 GM26723-04 12930	SMITH, PHILLIP R BIOLOGICAL STRUCTURAL STUDIES USING IMAGE PROCESSING	NEW YORK UNIVERSITY	NEW YORK	82 NEW YORK	06-83	4	91,899	BBCB 136,894
2	R01 GM27061-04 12930	CHIU, WAH ELECTRON MICROSCOPY ANALYSIS OF DNA-BINDING PROTEIN	UNIVERSITY OF ARIZONA	TUCSON	82 ARIZONA	06-83	2	77,220	BBCB 104,216
5	R01 GM27758-03 12930	BEER, MICHAEL ELECTRON MICROSCOPIC STUDIES OF COLLAGEN	JOHNS HOPKINS UNIVERSITY	BALTIMORE	82 MARYLAND	03-83	0	43,941	MBY 65,912
5	R01 GM27763-03 12930	BECKER, ROBERT P BIOMEDICAL APPLICATIONS OF BACKSCATTERED IMAGING	UNIVERSITY OF ILLINOIS MEDICAL CENTER	CHICAGO	82 ILLINOIS	03-83	0	27,409	CBY 43,032
5	R01 GM28209-03 12930	WAMPLER, JOHN E A UNIQUE LOW-LIGHT IMAGE PROCESSING MICROSCOPE SYSTEM	UNIVERSITY OF GEORGIA	ATHENS	82 GEORGIA	06-83	0	48,466	BBCA 66,738
5	R01 GM28313-03 12930	ALLEN, ROBERT D LASER SCANNING PHASE MODULATION RESEARCH MICROSCOPE	DARTMOUTH COLLEGE	HANOVER	82 NEW HAMPSHIRE	06-83	0	94,582	SSS 140,454
5	R01 GM28614-02 12930	TIVOL, WILLIAM F ELECTRON ENERGY-LOSS ELEMENT ANALYSIS OF WET CELLS	NEW YORK STATE DEPARTMENT OF HEALTH	ALBANY	82 NEW YORK	02-83	1	33,868	SSS 49,682
5	R01 GM28750-02 12930	FREY, TERRENCE G HIGH RESOLUTION ELECTRON MICROSCOPY OF MACROMOLECULES	UNIVERSITY OF PENNSYLVANIA	PHILADELPHIA	82 PENNSYLVANIA	03-83	1	50,546	BBCB 82,101
1	R01 GM29169-01A1 12930	FRANK, JOACHIM STRUCTURAL ANALYSIS OF MACROMOLECULAR ASSEMBLIES	NEW YORK STATE DEPARTMENT OF HEALTH	ALBANY	82 NEW YORK	03-83	2	86,382	SSS 121,823

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BIOMEDICAL ENGINEERING AND INSTRUMENT DEVELOPMENT SECTION										
MICROSCOPY AND MICROANALYSIS										
1	R01 GM29647-01 12930	HEUSER, JOHN E 3-D VISUALIZATION OF MEMBRANE CIRCULATION	WASHINGTON UNIVERSITY	SAINT LOUIS	82 MISSOURI	11-82	2	SSS	211,464	261,494
1	R01 GM31202-01 12930	MC GRATH, JOHN J OSMOSIS AND FREEZING IN LARGE UNILAMELLAR LIPOSOMES	MICHIGAN STATE UNIVERSITY	EAST LANSING	82 MICHIGAN	07-83	2	CBY	76,421	91,706
**	0	*CENTERS (P50)							0	0
**	0	PROGRAM PROJECTS (P01)							0	0
**	18	REGULAR PROJECTS (R01)							1,546,077	2,205,522
**	0	ALL OTHERS (P30, P41, R13, R23, R25)							0	0
**	18	TOTALS							1,546,077	2,205,522

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BIOMEDICAL ENGINEERING AND INSTRUMENT DEVELOPMENT SECTION									
CELLULAR INSTRUMENTATION									
5	R01 GM17367-13 / 12990	HERZENBERG, LEONARD A / CLINICAL AND BIOLOGICAL USES OF AUTOMATED CELL SORTING	STANFORD UNIVERSITY	STANFORD	82 / CALIFORNIA	12-82	1	SSS 326,059	515,173
5	P01 GM23088-05 / 12990	WHEELESS, LEON L, JR / PROGRAM FOR CELL ANALYSIS AND SORTING IN BIOMEDICINE	UNIVERSITY OF ROCHESTER	ROCHESTER	82 / NEW YORK	12-82	3	SSS 222,980	362,392
5	R01 GM25076-05 / 12990	LUCAS, JOE / CHROMOSOMAL FLOW CYTOMETRY: DNA AND CENTROMERES	UNIVERSITY OF CALIFORNIA	BERKELEY / BERKELEY	82 / CALIFORNIA	03-83	0	SSS 108,441	183,591
5	R01 GM26857-03 / 12990	SALZMAN, GARY C / BIOMEDICAL APPLICATIONS OF LIGHT-SCATTER TECHNOLOGY	UNIVERSITY OF CALIFORNIA	BERKELEY / BERKELEY	82 / CALIFORNIA	03-83	0	SSS 81,498	81,498
5	R01 GM27165-02 / 12990	GLASER, EDMUND M / INTERACTIVE CAMERA LUCIDA COMPUTER-MICROSCOPE	UNIVERSITY OF MARYLAND AT	BALTIMORE / BALTIMORE	81 / MARYLAND	12-82	0	SB 46,901	78,325
5	R01 GM27633-04 / 12990	WARE, BENNIE R / AUTOMATED ELECTROPHORETIC ANALYSIS OF LIVING CELLS	SYRACUSE UNIVERSITY AT	SYRACUSE / SYRACUSE	82 / NEW YORK	08-83	1	BBCA 61,525	95,085
5	R01 GM28221-02 / 12990	PRESTON, KENDALL, JR / COMPUTED TISSUE STEREOLOGY	CARNEGIE-MELLON UNIVERSITY	PITTSBURGH	82 / PENNSYLVANIA	12-82	2	SSS 128,188	176,815

			DIRECT	TOTAL
**	0	*CENTERS (P50)	0	0
**	1	PROGRAM PROJECTS (P01)	222,980	362,392
**	6	REGULAR PROJECTS (R01)	752,612	1,130,407
**	0	ALL OTHERS (P30, P41, R13, R23, R25)	0	0
**	7	TOTALS	975,592	1,492,799

SUMMARY OF BIOMEDICAL ENGINEERING AND INSTRUMENT DEVELOPMENT SECTION

			DIRECT	TOTAL
***	0	*CENTERS (P50)	0	0
***	6	PROGRAM PROJECTS (P01)	2,521,891	3,508,206
***	133	REGULAR PROJECTS (R01)	10,333,868	14,558,025
***	7	ALL OTHERS (P30, P41, R13, R23, R25)	101,898	139,545
***	146	TOTALS	12,957,657	18,205,776

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PHYSIOLOGICAL SCIENCES SECTION											
	ANESTHESIOLOGY CENTERS AND PROGRAM PROJECTS										
5	P50 GM15904-15	KITZ, RICHARD J	HARVARD UNIVERSITY		82	12-82	1		PTR		
*	13100	ANAESTHESIOLOGY CENTER FOR RESEARCH AND TEACHING		BOSTON	MASSACHUSETTS					253,775	388,016
**	1	*CENTERS (P50)									
**	0	PROGRAM PROJECTS (P01)								253,775	388,016
**	0	REGULAR PROJECTS (R01)								0	0
**	0	ALL OTHERS (P30, P41, R13, R23, R25)								0	0
**	1	TOTALS								0	0
										253,775	388,016

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PHYSIOLOGICAL SCIENCES SECTION										
	ANESTHESIOLOGY									
	5 R01 GM17158-11 13200	VAN DYKE, RUSSELL A METABOLISM OF VOLATILE ANESTHETICS	MAYO FOUNDATION	ROCHESTER	81 MINNESOTA	03-83	0	86,247	113,076	SAT
	2 R01 GM17536-13 13200	FEINSTEIN, MAURICE B MECHANISM OF ACTION OF ANESTHETICS	UNIVERSITY OF CONNECTICUT	HEALTH CENTER FARMINGTON	82 CONNECTICUT	12-82	4	81,519	112,803	PHY
	5 R01 GM21729-23 13200	GRONERT, GERALD A METABOLIC EFFECTS OF ANESTHESIA AND SURGERY	MAYO FOUNDATION	ROCHESTER	82 MINNESOTA	11-82	2	92,416	124,979	SAT
	5 R01 GM22113-06 13200	KENDIG, JOAN J MECHANISM OF LOCAL ANESTHETIC CONDUCTION BLOCK	STANFORD UNIVERSITY	STANFORD	82 CALIFORNIA	03-83	0	42,413	67,013	SAT
	2 R01 GM22746-07 13200	MAZZE, RICHARD I NEPHROTOXICITY OF FLUORINATED ANESTHETICS	STANFORD UNIVERSITY	STANFORD	82 CALIFORNIA	06-83	2	44,444	64,444	SAT
	5 R01 GM23029-06 13200	KAMINSKY, LAURENCE S HEPATIC MICROSOMAL ENZYME METABOLISM OF ANESTHETICS	NEW YORK STATE DEPARTMENT	OF HEALTH ALBANY	81 NEW YORK	03-83	0	31,502	45,031	PHRA
	5 R01 GM24313-06 13200	MILLER, EDWARD D, JR ANESTHETIC AGENTS--RENIN--HYPERTENSION	UNIVERSITY OF VIRGINIA	CHARLOTTESVILLE CHARLOTTESVILLE	82 VIRGINIA	06-83	0	48,919	70,933	SAT
	5 R01 GM24524-03 13200	DOWNES, HALL FATE AND EFFECTS OF LOCAL ANESTHETIC AEROSOLS	OREGON HEALTH SCIENCES	UNIVERSITY PORTLAND	81 OREGON	12-82	0	41,356	54,590	SGYA
	5 R01 GM24531-05 13200	TINKER, JOHN H ORGAN PROTECTION: ROLE OF ANESTHETICS	MAYO FOUNDATION	ROCHESTER	82 MINNESOTA	12-82	1	88,360	118,023	SAT
	2 R01 GM24866-04A1 13200	YEH, JAY Z MOLECULAR MECHANISM OF LOCAL ANESTHETIC ACTION	NORTHWESTERN UNIVERSITY	CHICAGO	82 ILLINOIS	06-83	2	50,401	63,791	PHY
	5 R01 GM24936-05 13200	PARMENTIER, JAMES L MODE OF ACTION OF VOLATILE ANESTHETICS	DUKE UNIVERSITY	DURHAM	82 NORTH CAROLINA	03-83	1	73,680	110,520	SAT
	5 R01 GM25926-04 13200	MULDOON, SHEILA M GENERAL ANESTHETICS AND VASCULAR NEUROEFFECTOR SYSTEMS	U.S. UNIFORMED SERVICES	UNIV OF HLTH SCI BETHESDA	82 MARYLAND	02-83	0	29,126	29,126	SAT
	5 R01 GM26136-05 13200	HUANG, JEN-TZAW ULTRALONG NERVE BLOCK AND UNCONVENTIONAL ANESTHETICS	VIRGINIA MASON RESEARCH	CENTER SEATTLE	82 WASHINGTON	08-83	0	36,469	54,941	SAT
	5 R01 GM26403-03 13200	MILLER, RONALD D PARALYSIS--ITS ANTAGONISM DURING SURGERY & ANESTHESIA	UNIVERSITY OF CALIFORNIA	SAN FRANCISCO SAN FRANCISCO	81 CALIFORNIA	11-82	0	32,935	43,145	PHRA
	5 R01 GM26407-03 13200	FINCK, A DONALD ROLE OF ENDORPHINS IN ANESTHETIC-INDUCED ANALGESIA	COLUMBIA UNIVERSITY	NEW YORK	82 NEW YORK	03-83	0	52,950	88,744	NEUA
	2 R01 GM26745-04 NS 13200	MATTEO, RICHARD S PHARMACOKINETICS, MUSCLE RELAXANTS & ANTAGONISTS	COLUMBIA UNIVERSITY	NEW YORK	82 NEW YORK	06-83	2	49,814	84,534	SAT

T GRANT NUMBER / PROG-AREA	INVESTIGATOR / PROJECT TITLE	GRANTEE INSTITUTION	CITY	FY / STATE	END-DATE	FUT-YRS AVAILABLE	IRG / SUB	DOLLARS DIRECT	DOLLARS TOTAL
PHYSIOLOGICAL SCIENCES SECTION									
ANESTHESIOLOGY									
2 R01 GM26950-04	UEDA, ISSAKU	UNIVERSITY OF UTAH		82	06-83	2		SAT	
13200	ANESTHETIC INTERACTION WITH MODEL PROTEINS		SALT LAKE CITY	UTAH				53,285	69,053
5 R01 GM27069-03	HORNBEIN, THOMAS F	UNIVERSITY OF WASHINGTON		82	02-83	0		SAT	
13200	BRAIN HYPOXIA IN INTRAOPERATIVE HYPOTENSION-HEMODILUTION		SEATTLE	WASHINGTON				49,635	63,500
5 R01 GM27340-03	STILLER, RICHARD L	UNIVERSITY OF PITTSBURGH		81	11-82	0		SGYA	
13200	CARDIOVASCULAR DYNAMICS AND ANESTHETIC DISPOSITION		PITTSBURGH	PENNSYLVANIA				76,227	104,428
5 R01 GM27353-03	GRUENER, RAPHAEL P	UNIVERSITY OF ARIZONA		82	05-83	0		SAT	
13200	ANESTHETIC ACTION ON NORMAL AND HYPERTHERMIA MUSCLES		TUCSON	ARIZONA				24,087	34,444
5 R01 GM27670-03	UEDA, ISSAKU	UNIVERSITY OF UTAH		82	03-83	0		SAT	
13200	AROMATIC AMINE LOCAL ANESTHETICS AND MEMBRANES		SALT LAKE CITY	UTAH				37,725	54,701
5 R01 GM27678-03	FINK, B RAYMOND	UNIVERSITY OF WASHINGTON		82	03-83	0		SAT	
13200	HYPOOSMOTIC LOCAL ANESTHESIA: MECHANISMS AND TOXICITY		SEATTLE	WASHINGTON				95,503	127,370
5 R01 GM28087-03	WANG, HOWARD H	UNIVERSITY OF CALIFORNIA SANTA CRUZ		82	08-83	0		BBCB	
13200	FUNCTIONALLY SIGNIFICANT BINDING OF LOCAL ANESTHETICS		SANTA CRUZ	CALIFORNIA				37,419	54,295
5 R01 GM28155-03	FORD, DOUGLAS J	UNIVERSITY OF CINCINNATI		82	06-83	0		PHRA	
13200	SPECIES DIFFERENCES IN HALOTHANE HEPATOTOXICITY		CINCINNATI	OHIO				57,619	80,667
5 R01 GM28267-03	BRIDENBAUGH, PHILLIP O	UNIVERSITY OF CINCINNATI		82	06-83	0		SAT	
13200	EFFECT OF TONICITY ON SPINAL ANESTHESIA IN THE MONKEY		CINCINNATI	OHIO				36,169	50,637
5 R01 GM28911-02	KNIGHT, PAUL R, III	UNIVERSITY OF MICHIGAN AT ANN ARBOR		82	03-83	1		SAT	
13200	ANESTHETIC ACTION AND VIRUS REPLICATION		ANN ARBOR	MICHIGAN				50,831	80,313
5 R01 GM29065-02	COLLINS, J	YALE UNIVERSITY		82	03-83	1		SAT	
13200	ANESTHESIA-ANALGESIA OF AWAKE SPINAL NEURONS		NEW HAVEN	CONNECTICUT				42,844	67,114
5 R01 GM29250-02	HOLADAY, DUNCAN A	VANDERBILT UNIVERSITY		81	02-83	0		SAT	
13200	METABOLISM OF VOLATILE FLUORINATED ANESTHETICS		NASHVILLE	TENNESSEE				68,451	97,599
5 R01 GM29520-02	WYRWICZ, ALICE M	UNIVERSITY OF ILLINOIS CHICAGO CIRCLE		82	08-83	1		BBCB	
13200	MAGNETIC RESONANCE INVESTIGATION OF ANESTHESIA		CHICAGO	ILLINOIS				37,479	56,593
1 R01 GM29527-01A1	RUSY, BEN F	UNIVERSITY OF WISCONSIN MADISON		82	04-83	2		SAT	
13200	ANESTHETIC INDUCED CARDIAC DEPRESSION		MADISON	WISCONSIN				26,898	38,064
5 R01 GM29628-02	MARSHALL, BRYAN E	UNIVERSITY OF PENNSYLVANIA		82	06-83	1		SAT	
13200	ANESTHESIA & HYPOXIC PULMONARY VASOCONSTRICTION		PHILADELPHIA	PENNSYLVANIA				93,558	148,553
5 R01 GM29641-02	KAMPINE, JOHN P	MEDICAL COLLEGE OF WISCONSIN		82	06-83	1		SAT	
13200	THE EFFECTS OF ANESTHETICS ON CARDIOVASCULAR REFLEXES		MILWAUKEE	WISCONSIN				45,976	54,619

TABLE-4 RESEARCH GRANTS ACTIVE AS OF 09-30-82 BY PROGRAM AREA AND GRANT NUMBER

T	GRANT NUMBER / PROG-AREA	INVESTIGATOR / PROJECT TITLE	GRANTEE INSTITUTION	CITY	STATE	FY	END-DATE	FUT-YRS AVAILABLE	IRG	DIRECT	SUB	TOTAL
PHYSIOLOGICAL SCIENCES SECTION												
ANESTHESIOLOGY												
1	R01 GM30160-01 HS 13200	STRICHARTZ, GARY R DIFFERENTIAL ANESTHESIA OF NERVE FIBERS	PETER BENT BRIGHAM HOSPITAL	BOSTON	MASSACHUSETTS	82	01-83	2		133,395	SAT	159,803
1	R01 GM30703-01 13200	OHNISHI, S TSUYOSHI EFFECT OF ANESTHETICS ON CARDIAC SARCOPLASMIC RETICULUM	HAHNEMANN MED COL & HOSP OF PHILADELPHIA	PHILADELPHIA	PENNSYLVANIA	82	04-83	2		48,804	SAT	72,079
5	R01 GM30799-02 13200	BLANCK, THOMAS J J ANESTHETIC DEPRESSION OF THE MYOCARDIUM	JOHNS HOPKINS UNIVERSITY	BALTIMORE	MARYLAND	82	04-83	3		41,621	SAT	58,632
1	R01 GM30820-01 HL 13200	CHRISTIAN, CHARLES, II ANESTHESIA AND THE CARDIOVASCULAR SYSTEM	DUKE UNIVERSITY	DURHAM	NORTH CAROLINA	82	07-83	2		92,058	SAT	127,155

**	0	**CENTERS (P50)	0	0
**	0	PROGRAM PROJECTS (P01)	0	0
**	36	REGULAR PROJECTS (R01)	2,032,135	2,845,312
**	0	ALL OTHERS (P30, P41, R13, R23, R25)	0	0
**	36	TOTALS	2,032,135	2,845,312

T	GRANT NUMBER / PROG-AREA	INVESTIGATOR / PROJECT TITLE	GRANTEE INSTITUTION	CITY	FY / STATE	END-DATE	FUT-YRS AVAILABLE	DOLLARS DIRECT	DOLLARS TOTAL	IRG	SUB
	PHYSIOLOGICAL SCIENCES SECTION										
	ANESTHESIOLOGY NEW INVESTIGATOR										
5	R23 GM27172-03	PRIANO, LAWRENCE L	UNIVERSITY OF TEXAS MED BR GALVESTON		82	12-82	0			SAT	
	13250	ACTION OF I V ANESTHETICS ON REGIONAL BLOOD FLOWS		GALVESTON	TEXAS			24,250	32,738		
5	R23 GM27791-03	WASKELL, LUCY A	UNIVERSITY OF CALIFORNIA SAN FRANCISCO		82	08-83	0			SAT	
	13250	METABOLISM OF INHALATION ANESTHETICS		SAN FRANCISCO	CALIFORNIA			30,256	36,417		
5	R23 GM27942-03	GRUNDY, BETTY L	UNIVERSITY OF PITTSBURGH		81	10-82	0			SGYA	
	13250	EFFECTS OF ANESTHETICS ON CORTICAL EVOKED POTENTIALS		PITTSBURGH	PENNSYLVANIA			29,894	45,338		
5	R23 GM28032-03	STANSKI, DONALD R	STANFORD UNIVERSITY		82	06-83	0			SAT	
	13250	INTRAVENOUS ANESTHETICS IN SURGICAL PATIENTS		STANFORD	CALIFORNIA			26,601	38,571		
5	R23 GM28502-02	CAHALAN, MICHAEL K	UNIVERSITY OF CALIFORNIA SAN FRANCISCO		82	11-82	1			SAT	
	13250	THE RATE OF METABOLISM OF VOLATILE ANESTHETICS IN MAN		SAN FRANCISCO	CALIFORNIA			33,950	44,475		
5	R23 GM28812-02	CRONNELLY, ROY	UNIVERSITY OF CALIFORNIA SAN FRANCISCO		82	03-83	1			PHRA	
	13250	PHARMACOKINETICS/DYNAMICS OF MUSCLE RELAXANT ANTAGONISTS		SAN FRANCISCO	CALIFORNIA			33,950	44,475		
5	R23 GM29664-02	SMITH, DAVID S	UNIVERSITY OF PENNSYLVANIA		82	06-83	1			SAT	
	13250	THE ROLE OF HYPOXIA IN THE PRODUCTION OF CEREBRAL EDEMA		PHILADELPHIA	PENNSYLVANIA			36,375	55,729		
1	R23 GM30502-01	CROSBY, GREGORY J	MASSACHUSETTS GENERAL HOSPITAL		82	04-83	2			SAT	
	13250	SPINAL CORD AND BRAIN LOCAL METABOLISM DURING ANESTHESIA		BOSTON	MASSACHUSETTS			32,933	46,209		
1	R23 GM31144-01	LYNCH, CARL, III	UNIVERSITY OF VIRGINIA CHARLOTTESVILLE		82	07-83	2			SAT	
	13250	CALCIUM CURRENT DEPRESSION BY VOLATILE ANESTHETICS		CHARLOTTESVILLE	VIRGINIA			28,126	40,783		

**	0	*CENTERS (P50)		
**	0	PROGRAM PROJECTS (P01)	0	0
**	0	REGULAR PROJECTS (R01)	0	0
**	9	ALL OTHERS (P30, P41, R13, R23, R25)	0	0
**	9	TOTALS	276,335	384,735
			276,335	384,735

TABLE-4 RESEARCH GRANTS ACTIVE AS OF 09-30-82 BY PROGRAM AREA AND GRANT NUMBER

T	GRANT NUMBER / PROG-AREA	INVESTIGATOR / PROJECT TITLE	GRANTEE INSTITUTION	CITY	FY / STATE	END-DATE	FUT-YRS AVAILABLE	IRG SUB DOLLARS DIRECT	TOTAL
	PHYSIOLOGICAL SCIENCES SECTION								
		TRAUMA AND BURNS CENTERS AND PROGRAM PROJECTS							
2	P50 GM15426-16	BOURKE, ROBERT S	ALBANY MEDICAL COLLEGE	ALBANY	82	06-83	2	378,704	SRC 549,555
*	13300	ON-LINE COMPUTER STUDY OF THERAPY FOR HUMAN SHOCK			NEW YORK				
5	P01 GM15768-13	BORDER, JOHN R	STATE UNIVERSITY OF NEW YORK AT BUFFALO	BUFFALO	81	06-83	0	247,487	SRC 316,346
	13300	SEQUENCE OF ORGAN FAILURES FOLLOWING TRAUMA			NEW YORK				
5	P50 GM18470-11	TRUNKEY, DONALD D	UNIVERSITY OF CALIFORNIA SAN FRANCISCO	SAN FRANCISCO	82	06-83	0	336,241	SRC 410,214
*	13300	TRAUMA CENTER RESEARCH PROGRAM			CALIFORNIA				
5	P50 GM21681-18	BAXTER, CHARLES R	UNIVERSITY OF TEXAS HLTH SCI CTR DALLAS	DALLAS	82	11-82	1	182,781	SGYB 245,538
*	13300	CIRUCLATORY AND FLUID VOLUME CHANGES IN BURNS			TEXAS				
5	P50 GM21700-08	BURKE, JOHN F	MASSACHUSETTS GENERAL HOSPITAL	BOSTON	82	11-82	3	426,381	SRC 576,746
*	13300	BURN TRAUMA CENTER			MASSACHUSETTS				
2	P01 GM23065-07A1	LONG, CALVIN L	MEDICAL COLLEGE OF OHIO AT TOLEDO	TOLEDO	82	06-83	2	238,566	SRC 376,955
	13300	METABOLIC RESPONSE TO TRAUMA			OHIO				
5	P50 GM23095-07	MOODY, FRANK G	UNIVERSITY OF UTAH	SALT LAKE CITY	82	06-83	2	319,687	SRC 436,445
*	13300	TRAUMA AND BURN RESEARCH CENTER			UTAH				
5	P50 GM24990-05	CARRICO, C JAMES	UNIVERSITY OF WASHINGTON	SEATTLE	82	07-83	3	371,676	SRC 435,746
*	13300	ORGAN AND CELLULAR RESPONSE TO TRAUMA AND BURNS			WASHINGTON				
5	P50 GM26145-04	SHIRES, G THOMAS	CORNELL UNIVERSITY MEDICAL CENTER	NEW YORK	82	03-83	1	249,070	SRC 363,807
*	13300	BURN AND TRAUMA RESEARCH CENTER			NEW YORK				
5	P50 GM27345-03	HUNT, THOMAS K	UNIVERSITY OF CALIFORNIA SAN FRANCISCO	SAN FRANCISCO	82	12-82	0	295,406	SRC 386,125
*	13300	A STUDY OF WOUND HEALING AND WOUND INFECTION			CALIFORNIA				
5	P50 GM29327-02	WILMORE, DOUGLAS W	PETER BENT BRIGHAM HOSPITAL	BOSTON	82	08-83	3	320,263	SRC 401,799
*	13300	TRAUMA--REGULATORS & MODULATORS OF THE CATABOLIC STATE			MASSACHUSETTS				
1	P01 GM29853-01	STRIKER, GARY E	UNIVERSITY OF WASHINGTON	SEATTLE	82	01-83	4	360,372	SRC 450,570
	13300	CELL & MOLECULAR RESPONSE TO MECHANICAL & THERMAL INJURY			WASHINGTON				
								2,880,209	3,805,975
								846,425	1,143,871
								0	0
								0	0
								3,726,634	4,949,846

**	9	*CENTERS (P50)
**	3	PROGRAM PROJECTS (P01)
**	0	REGULAR PROJECTS (R01)
**	0	ALL OTHERS (P30, P41, R13, R23, R25)
**	12	TOTALS

T GRANT NUMBER / PROG-AREA	INVESTIGATOR / PROJECT TITLE	GRANTEE INSTITUTION	CITY	FY / STATE	END-DATE	FUT-YRS AVAILABLE	IRG SUB DOLLARS DIRECT	TOTAL
PHYSIOLOGICAL SCIENCES SECTION								
TRAUMA AND BURNS - PHYSIOLOGY								
5 R01 GM21447-08 13410	SABA, THOMAS M SYSTEMIC HOST DEFENSE FOLLOWING TRAUMA	ALBANY MEDICAL COLLEGE	ALBANY	82 NEW YORK	11-82	1	55,094	SAT 88,150
5 R01 GM24028-05 13410	SAELINGER, CATHARINE B PATHOGENESIS OF PSEUDOMONAS IN THERMAL INJURY	UNIVERSITY OF CINCINNATI	CINCINNATI	82 OHIO	03-83	2	60,909	SAT 85,273
2 R01 GM24481-05A1 13410	RAPAPORT, FELIX T MECHANISMS OF CELL DAMAGE IN SEVERE BURNS	STATE UNIVERSITY NEW YORK STONY BROOK	STONY BROOK	82 NEW YORK	04-83	2	175,424	SAT 240,462
2 R01 GM24834-06 AI 13410	HENSON, PETER M RELEASE OF INJURIOUS CONSTITUENTS FROM CELLS	NATIONAL JEWISH HOSPITAL & RESEARCH CTR	DENVER	82 COLORADO	06-83	4	100,522	ALY 142,028
2 R01 GM24901-06 13410	PETERS, RICHARD M INTERSTITIAL TISSUE AND ONCOTIC PRESSURE IN TRAUMA	UNIVERSITY OF CALIFORNIA SAN DIEGO	LA JOLLA	82 CALIFORNIA	06-83	4	88,706	SAT 117,571
5 R01 GM25504-03 13410	BAXTER, CHARLES R LEUKOCYTE FUNCTION IN BURN AND TRAUMA PATIENTS	UNIVERSITY OF TEXAS HLTH SCI CTR DALLAS	DALLAS	81 TEXAS	11-82	0	74,795	SSS 101,569
5 R01 GM25666-05 13410	URBANIAK, JAMES R TISSUE INJURY, REVASCULARIZATION AND TRANSPLANTATION	DUKE UNIVERSITY	DURHAM	82 NORTH CAROLINA	02-83	1	101,474	AFY 152,211
5 R01 GM25759-03 13410	ROBINSON, WILLIAM A RED AND WHITE BLOOD CELL PRODUCTION IN BURNED HUMANS	UNIVERSITY OF COLORADO HLTH SCIENCES CTR	DENVER	82 COLORADO	03-83	2	76,361	SAT 95,069
2 R01 GM25896-04 13410	MILLER, CAROL L ANALYSIS OF IMMUNE STATUS OF TRAUMA AND SURGICAL PATIENT	UNIVERSITY OF CALIFORNIA SAN FRANCISCO	SAN FRANCISCO	82 CALIFORNIA	12-82	2	71,179	SAT 92,702
2 R01 GM25946-04 13410	KAPLAN, JOHN E PHAGOCYTIC CONTROL OF THROMBOSIS DURING SEPSIS	ALBANY MEDICAL COLLEGE	ALBANY	82 NEW YORK	11-82	2	50,938	HEM 79,474
2 R01 GM26016-04A1 13410	MANNICK, JOHN A IMMUNOLOGIC STUDIES OF PATIENTS AFTER TRAUMATIC INJURY	PETER BENT BRIGHAM HOSPITAL	BOSTON	82 MASSACHUSETTS	01-83	4	140,664	SSS 168,234
2 R01 GM26102-04A1 13410	LOEGERING, DANIEL J HEMOLYSIS AND PHAGOCYTIC DYSFUNCTION DURING SHOCK	ALBANY MEDICAL COLLEGE	ALBANY	82 NEW YORK	06-83	2	57,888	SAT 89,261
5 R01 GM26235-03 13410	WINCHURCH, RICHARD A TRAUMA-INDUCED SUPPRESSION OF IMMUNITY	JOHNS HOPKINS UNIVERSITY	BALTIMORE	81 MARYLAND	07-85	0	43,529	IMS 65,294
5 R01 GM26297-06 13410	LOEGERING, DANIEL J MECHANISM OF RETICULOENDOTHELIAL FAILURE IN SHOCK	ALBANY MEDICAL COLLEGE	ALBANY	81 NEW YORK	09-82	0	30,354	SGYA 44,924
5 R01 GM26956-03 13410	SANCES, ANTHONY, JR ELECTRICAL BURN INJURY STUDIES	MEDICAL COLLEGE OF WISCONSIN	MILWAUKEE	81 WISCONSIN	12-82	0	66,033	SAT 87,694
5 R01 GM27229-03 13410	LEWIS, FRANK R, JR LUNG WATER AND PULMONARY CAPILLARY PERMEABILITY	UNIVERSITY OF CALIFORNIA SAN FRANCISCO	SAN FRANCISCO	82 CALIFORNIA	01-83	2	62,429	SAT 81,782

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PHYSIOLOGICAL SCIENCES SECTION											
TRAUMA AND BURNS - PHYSIOLOGY											
5	R01 GM27673-03 13410	COOK, JAMES A ROLE OF THROMBOXANE AND PROSTAGLANDINS IN SHOCK	MEDICAL UNIVERSITY OF SOUTH CAROLINA	CHARLESTON	SOUTH CAROLINA	82	03-83	0	41,258	SAT 54,048	
5	R01 GM28499-02 13410	WARD, PETER A THERMAL INJURY, COMPLEMENT, AND LEUKOCYTE DYSFUNCTION	UNIVERSITY OF MICHIGAN AT ANN ARBOR	ANN ARBOR	MICHIGAN	82	12-82	3	64,787	SAT 102,363	
5	R01 GM29223-03 13410	NINNEMANN, JOHN L LPS ACTIVATION OF SUPPRESSOR CELLS AFTER BURN INJURY	UNIVERSITY OF UTAH	SALT LAKE CITY	UTAH	82	08-83	0	91,074	SAT 123,640	
5	R01 GM29226-02 13410	NINNEMANN, JOHN L IMMUNE CONSEQUENCES OF THERMAL INJURY	UNIVERSITY OF UTAH	SALT LAKE CITY	UTAH	82	03-83	1	56,628	SAT 82,111	
5	R01 GM29256-11 13410	MANDEL, LAZARO J MECHANISMS OF ACTIVE AND PASSIVE SOLUTE TRANSPORT	DUKE UNIVERSITY	DURHAM	NORTH CAROLINA	82	08-83	0	54,124	PHY 80,686	
1	R01 GM29507-01A1 HL 13410	WARD, PETER A LUNG INJURY PRODUCED BY OXYGEN METABOLITES	UNIVERSITY OF MICHIGAN AT ANN ARBOR	ANN ARBOR	MICHIGAN	82	06-83	4	89,136	SAT 137,819	
1	R01 GM30473-01 13410	SPATH, JAMES A, JR SEROTONIN AND OPIATE INTERACTIONS IN HEMORRHAGIC SHOCK	THOMAS JEFFERSON UNIVERSITY	PHILADELPHIA	PENNSYLVANIA	82	04-83	2	62,604	SAT 97,289	
5	R01 GM30720-02 13410	REESE, ANDY C CIG FUNCTION: INTERACTION WITH FREE MACROPHAGES	MEDICAL COLLEGE OF GEORGIA	AUGUSTA	GEORGIA	82	07-83	0	56,168	EI 80,323	
1	R01 GM31066-01 13410	GROSSMAN, JEFFREY E CRYOPRECIPITATE THERAPY OF CRITICALLY ILL PATIENTS	UNIVERSITY OF WISCONSIN MADISON	MADISON	WISCONSIN	82	07-83	1	42,934	SAT 61,396	
1	R01 GM31078-01 13410	MC INTOSH, TRACY K ENDORPHIN AND CATECHOLAMINE RESPONSE TO SHOCK AND TRAUMA	BOSTON UNIVERSITY	BOSTON	MASSACHUSETTS	82	06-83	2	45,533	SAT 81,777	
5	R01 GM31080-02 13410	MESCHER, ANTHONY LOUIS INJURY-INDUCED GROWTH AND MYELIN-DERIVED GROWTH FACTORS	INDIANA UNIV-PURDUE UNIV AT INDIANAPOLIS	INDIANAPOLIS	INDIANA	82	05-83	0	27,872	CBY 39,123	
1	R01 GM31150-01 13410	HEIMBACH, DAVID M EFFECTS OF MULTIPLE TRANSFUSIONS IN TRAUMA AND BURNS	UNIVERSITY OF WASHINGTON	SEATTLE	WASHINGTON	82	07-83	2	51,595	SAT 68,933	
7	R01 GM31662-01 13410	DEMLING, ROBERT H PATHOPHYSIOLOGY OF LUNGS AFTER THERMAL INJURY	BETH ISRAEL HOSPITAL	BOSTON	MASSACHUSETTS	82	06-83	1	105,065	SAT 152,350	
								0		0	
								0		0	
								2,045,077		2,893,553	
								0		0	
								2,045,077		2,893,553	

**	0	*CENTERS (P50)
**	0	PROGRAM PROJECTS (P01)
**	29	REGULAR PROJECTS (R01)
**	0	ALL OTHERS (P30, P41, R13, R23, R25)
**	29	TOTALS

PHYSIOLOGICAL SCIENCES SECTION
TRAUMA AND BURNS - BIOCHEMISTRY

T GRANT NUMBER / PROG-AREA	INVESTIGATOR / PROJECT TITLE	GRANTEE INSTITUTION	CITY	FY / STATE	END-DATE	FUT-YRS AVAILABLE	DOLLARS DIRECT	DOLLARS TOTAL	IRG SUB
5 R01 GM19328-11 / 13420	LEVENSON, STANLEY M / BURN DEBRIDEMENT: CHEMICAL, ENZYMATIC	YESHIVA UNIVERSITY	NEW YORK	82 / NEW YORK	06-83	2	111,114	205,812	SAT
5 R01 GM20298-09 / 13420	COHEN, IRWIN K / COLLAGEN METABOLISM IN WOUND REPAIR AND KELOID	VIRGINIA COMMONWEALTH UNIVERSITY	RICHMOND	82 / VIRGINIA	11-82	2	73,340	112,050	SAT
5 R01 GM22825-06 / 13420	TURINSKY, JIRI / MECHANISM OF INSULIN RESISTANCE AFTER BURNS	ALBANY MEDICAL COLLEGE	ALBANY	81 / NEW YORK	02-83	0	43,605	64,535	MET
5 R01 GM23000-07 / 13420	SHIRES, GEORGE T / EVALUATION OF SALINE SOLUTIONS IN THERAPY OF SHOCK	CORNELL UNIVERSITY MEDICAL CENTER	NEW YORK	82 / NEW YORK	06-83	3	81,114	119,333	SAT
5 R01 GM23946-06 / 13420	YANNAS, IOANNIS V / DESIGN AND EVALUATION OF AN ARTIFICIAL SKIN	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	CAMBRIDGE	82 / MASSACHUSETTS	03-83	0	115,578	162,010	SAT
5 R01 GM24206-05 / 13420	BLACKBURN, GEORGE L / BRANCHED CHAIN AMINO ACID FEEDING DURING INJURY	NEW ENGLAND DEACONESS HOSPITAL	BOSTON	82 / MASSACHUSETTS	07-83	3	86,288	143,900	SAT
5 R01 GM24900-05 / 13420	AKESON, WAYNE H / EXERCISE EFFECTS ON TENDON REPAIR	UNIVERSITY OF CALIFORNIA SAN DIEGO	LA JOLLA	81 / CALIFORNIA	03-83	0	63,052	82,598	SSS
5 R01 GM25078-05 / 13420	TRUNKEY, DONALD D / INTRACELLULAR MEDIATORS DURING SEPTIC AND BURN SHOCK	UNIVERSITY OF CALIFORNIA SAN FRANCISCO	SAN FRANCISCO	82 / CALIFORNIA	03-83	0	70,254	92,033	SGYA
5 R01 GM25188-05 / 13420	ROSEN, GERALD M / HEPATIC METABOLIC DYSFUNCTION ASSOCIATED WITH TRAUMA	DUKE UNIVERSITY	DURHAM	82 / NORTH CAROLINA	03-83	1	69,824	104,736	SAT
2 R01 GM25561-04A1 / 13420	EHRLICH, H PAUL / THE CONTROL AND MODIFICATION OF SCAR FORMATION	MASSACHUSETTS GENERAL HOSPITAL	BOSTON	82 / MASSACHUSETTS	03-83	2	56,636	69,409	SAT
5 R01 GM25753-04 / 13420	ROSEN, GERALD M / POST TRAUMATIC FATTY ACID METABOLISM AND CELLULAR INJURY	DUKE UNIVERSITY	DURHAM	82 / NORTH CAROLINA	11-82	1	83,617	125,426	SGYA
5 R01 GM26396-04 / 13420	ELWYN, DAVID H / COMPOSITION OF WEIGHT GAIN IN SURGICAL PATIENTS	COLUMBIA UNIVERSITY	NEW YORK	82 / NEW YORK	07-83	0	62,163	105,491	NTN
2 R01 GM26433-04 / 13420	GUMP, FRANK E / REGIONAL METABOLISM IN SEPSIS	COLUMBIA UNIVERSITY	NEW YORK	82 / NEW YORK	03-83	2	94,498	157,121	SAT
2 R01 GM27946-03 / 13420	GANN, DONALD S / HORMONAL AND CARDIOVASCULAR RESPONSE TO TRAUMA	RHODE ISLAND HOSPITAL	PROVIDENCE	82 / RHODE ISLAND	06-83	4	132,243	201,971	SAT
5 R01 GM28023-03 / 13420	FLYNN, JOHN T / RELATIONSHIPS BETWEEN PROSTANOIDS AND CELLULAR INJURY	THOMAS JEFFERSON UNIVERSITY	PHILADELPHIA	82 / PENNSYLVANIA	08-83	0	28,474	49,545	SAT
5 R01 GM28485-02 / 13420	ULEVITCH, RICHARD J / MOLECULAR PATHOLOGY OF LPS-INDUCED SHOCK AND DIC	SCRIPPS CLINIC AND RESEARCH FOUNDATION	LA JOLLA	82 / CALIFORNIA	02-83	0	49,844	82,193	SAT

TABLE-4 RESEARCH GRANTS ACTIVE AS OF 09-30-82 BY PROGRAM AREA AND GRANT NUMBER

T	GRANT NUMBER / PROG-AREA	INVESTIGATOR / PROJECT TITLE	GRANTEE INSTITUTION	CITY	FY / STATE	END-DATE	FUT-YRS AVAILABLE DIRECT	IRG SUB DOLLARS TOTAL
	PHYSIOLOGICAL SCIENCES SECTION TRAUMA AND BURNS - BIOCHEMISTRY							
	5 R01 GM28689-02 13420	EHRLICH, H PAUL ABNORMAL HEALING IN A MUTANT MOUSE MODEL	MASSACHUSETTS GENERAL HOSPITAL	BOSTON	82 MASSACHUSETTS	12-82	58,901 1	SAT 63,363
	5 R01 GM28833-03 13420	UITTO, JOUNI J COLLAGEN BIOSYNTHESIS BY CULTURED HUMAN FIBROBLASTS	LOS ANGELES COUNTY HARBOR-UCLA MED CTR	TORRANCE	82 CALIFORNIA	07-83	66,467 0	GMA 88,553
	5 R01 GM28889-03 13420	MELA, LEENA M INTRACELLULAR CHANGES INDUCED BY SHOCK AND TRAUMA	MICHIGAN STATE UNIVERSITY	EAST LANSING	82 MICHIGAN	08-83	103,952 2	SAT 146,572
	1 R01 GM28964-01A1 13420	RUSH, BENJAMIN F, JR CELL BIOLOGY OF HEPATOCYTES INJURED BY HEMORRHAGIC SHOCK	UNIVERSITY OF MEDICINE & DENTISTRY OF NJ	NEWARK	82 NEW JERSEY	01-83	70,325 2	SAT 111,755
	5 R01 GM29135-02 13420	LEIBOVICH, S JOSEPH MACROPHAGES, FIBROBLAST STIMULATION, AND WOUND REPAIR	NORTHWESTERN UNIVERSITY	CHICAGO	82 ILLINOIS	12-82	40,008 1	SAT 55,211
	5 R01 GM29257-03 13420	HARPER, ROBERT A EPIDERMAL GROWTH FACTOR IN HUMAN SKIN AND DISEASE	TEMPLE UNIVERSITY	PHILADELPHIA	82 PENNSYLVANIA	08-83	75,012 0	GMA 119,269
	1 R01 GM29531-01A1 HL 13420	KARIMAN, KHALIL MONITORING OF CYTOCHROME REDOX STATE IN SHOCK	DUKE UNIVERSITY	DURHAM	82 NORTH CAROLINA	04-83	87,057 2	SAT 119,618
	1 R01 GM29543-01A1 13420	BLOEDOW, DUANE C POSTBURN SERUM DRUG BINDING IN HUMANS	UNIVERSITY OF COLORADO AT BOULDER	BOULDER	82 COLORADO	07-83	40,759 2	PHRA 55,526
	5 R01 GM29796-02 13420	CURRERI, P WILLIAM METABOLISM AND NUTRITION IN BURNS AND TRAUMA	UNIVERSITY OF SOUTH ALABAMA	MOBILE	82 ALABAMA	01-83	69,792 2	SAT 88,307
	1 R01 GM30312-01 13420	SPITZER, JUDY A ALTERED CA2+ HOMEOSTASIS & METABOLIC FUNCTIONS IN SEPSIS	LOUISIANA STATE UNIV MED CTR NEW ORLEANS	NEW ORLEANS	82 LOUISIANA	12-82	57,756 4	SAT 76,263
	1 R01 GM30407-01 13420	BAXTER, CHARLES R COMPOSITE GRAFTS IN THE TREATMENT OF THERMAL INJURY	UNIVERSITY OF TEXAS HLTH SCI CTR DALLAS	DALLAS	82 TEXAS	04-83	106,262 2	SAT 132,793
	5 R01 GM30755-02 13420	KOCHEVAR, IRENE E ULTRAVIOLET LIGHT INDUCED PHENOMENA IN BIOMEMBRANES	MASSACHUSETTS GENERAL HOSPITAL	BOSTON	82 MASSACHUSETTS	07-83	72,915 0	GMA 103,590
	7 R01 GM31664-01 13420	LIU, MAW-SHUNG HEPATIC GLUCOSE METABOLISM IN SHOCK	ST. LOUIS UNIVERSITY	SAINT LOUIS	82 MISSOURI	03-83	53,183 0	SAT 79,775
							0 0 2,124,033 0 2,124,033	0 0 3,118,758 0 3,118,758

**	0	*CENTERS (P50)
**	0	PROGRAM PROJECTS (P01)
**	29	REGULAR PROJECTS (R01)
**	0	ALL OTHERS (P30, P41, R13, R23, R25)
**	29	TOTALS

TABLE-4 RESEARCH GRANTS ACTIVE AS OF 09-30-82 BY PROGRAM AREA AND GRANT NUMBER

T	GRANT NUMBER / PROG-AREA	INVESTIGATOR / PROJECT TITLE	GRANTEE INSTITUTION	CITY	STATE	FY	END-DATE	FUT-YRS AVAILABLE	DOLLARS DIRECT	IRG SUB DOLLARS TOTAL
PHYSIOLOGICAL SCIENCES SECTION										
TRAUMA AND BURNS NEW INVESTIGATOR										
5	R23 GM27098-03	POLLARD, RICHARD B	UNIVERSITY OF TEXAS MED BR GALVESTON	GALVESTON	TEXAS	82	12-82	0	34,726	VR 46,880
	13450	HERPESVIRUSES AND IMMUNITY IN BURNED CHILDREN								
5	R23 GM27245-03	SUGERMAN, HARVEY J	VIRGINIA COMMONWEALTH UNIVERSITY	RICHMOND	VIRGINIA	82	12-82	0	29,617	SB 45,373
	13450	PATHOPHYSIOLOGIC EFFECTS OF PERITONITIS								
5	R23 GM28591-02	GELFAND, JEFFREY A	TUFTS UNIVERSITY	BOSTON	MASSACHUSETTS	82	11-82	1	33,950	SAT 53,811
	13450	BURN INJURY AND SHOCK: THE ROLE OF COMPLEMENT								
5	R23 GM29371-02	GAMELLI, RICHARD L	UNIVERSITY OF VERMONT & ST AGRIC COLLEGE	BURLINGTON	VERMONT	82	07-83	1	34,920	SAT 52,031
	13450	LYMPHOMYELOPOIETIC RESPONSE TO BURN INJURY								
5	R23 GM29617-02	ALLMAN, FRANK D	CHILDREN'S HOSPITAL OF LOS ANGELES	LOS ANGELES	CALIFORNIA	82	06-83	1	29,100	SAT 42,734
	13450	HYPERMETABOLISM AFTER SEVERE HEAD TRAUMA IN CHILDREN								
1	R23 GM30086-01	DAVIS, JOHN M	CORNELL UNIVERSITY MEDICAL CENTER	NEW YORK	NEW YORK	82	01-83	2	35,000	SAT 50,840
	13450	IMPAIRED HOST DEFENSE MECHANISMS IN SHOCK								
1	R23 GM30272-01	MAIER, RONALD V	UNIVERSITY OF WASHINGTON	SEATTLE	WASHINGTON	82	12-82	2	36,900	SAT 43,222
	13450	CELLULAR MECHANISMS LPS-INDUCED INJURY								

**	0	*CENTERS (P50)		
**	0	PROGRAM PROJECTS (P01)	0	0
**	0	REGULAR PROJECTS (R01)	0	0
**	7	ALL OTHERS (P30, P41, R13, R23, R25)	0	0
**	7	TOTALS	234,213	334,891
			234,213	334,891

TABLE-4 RESEARCH GRANTS ACTIVE AS OF 09-30-82 BY PROGRAM AREA AND GRANT NUMBER

T	GRANT NUMBER / PROG-AREA	INVESTIGATOR / PROJECT TITLE	GRANTEE INSTITUTION	CITY	STATE	FY	END-DATE	FUT-YRS AVAILABLE	DOLLARS DIRECT	IRG SUB TOTAL
PHYSIOLOGICAL SCIENCES SECTION										
BEHAVIORAL SCIENCES AND ADAPTATION										
5	R01 GM07495-20 / 13700	MC GILL, THOMAS E / THE GENETICS AND PHYSIOLOGY OF	WILLIAMS COLLEGE / BEHAVIORAL DIFFERENCES	WILLIAMSTOWN	MASSACHUSETTS	81	02-83	0	52,182	EXP 78,763
5	R01 GM21993-07 / 13700	LYNCH, CAROL B / GENETIC ANALYSIS OF BEHAVIORAL	WESLEYAN UNIVERSITY / THERMOREGULATION	MIDDLETOWN	CONNECTICUT	81	03-83	0	49,760	GEN 69,907
3	R01 GM21993-07S1 / 13700	LYNCH, CAROL B / GENETIC ANALYSIS OF BEHAVIORAL	WESLEYAN UNIVERSITY / THERMOREGULATION	MIDDLETOWN	CONNECTICUT	82	03-83	0	22,083	GEN 36,063
5	R01 GM23336-06 / 13700	KAELBER, WILLIAM W / EXPERIMENTAL INVESTIGATION OF PAIN	UNIVERSITY OF IOWA	IOWA CITY	IOWA	81	05-83	0	53,257	NLS 73,495
2	R01 GM23618-06 / 13700	COLLINS, ROBERT L / LATERALIZATION OF FUNCTION:	JACKSON LABORATORY / BEHAVIOR GENETIC ANALYSIS	BAR HARBOR	MAINE	82	07-83	2	84,620	MGN 128,508
5	R01 GM23696-06 / 13700	ROSENFELD, JOEL P / MORPHINE AND NOCICEPTIVE BRAIN	NORTHWESTERN UNIVERSITY / STIMULATION	EVANSTON	ILLINOIS	82	02-83	2	33,659	DABR 46,449
5	R01 GM25998-03 / 13700	PROUDFIT, HERBERT K / CNS SITES OF ACTION OF ANALGESIC	UNIVERSITY OF ILLINOIS MEDICAL CENTER / DRUGS	CHICAGO	ILLINOIS	82	12-82	0	26,509	SAT 41,619
5	R01 GM26012-02 / 13700	HALPERIN, MAX / EARLY STOPPING IN LONG-TERM	GEORGE WASHINGTON UNIVERSITY / CLINICAL TRIALS	WASHINGTON	DIST OF COL	81	11-82	0	37,937	SSS 56,147
5	R01 GM26461-04 / 13700	YANG, JOSEPH C / ANALGESICS IN EXPERIMENTAL AND	COLUMBIA UNIVERSITY / CLINICAL PAIN	NEW YORK	NEW YORK	82	06-83	0	35,936	NEUA 60,983
5	R01 GM27226-03 / 13700	BRONZINO, JOSEPH D / BRAIN STEM MECHANISMS INVOLVED	TRINITY COLLEGE / IN PAIN MODULATION	HARTFORD	CONNECTICUT	82	12-83	0	39,319	NEUA 63,644
5	R01 GM27739-03 / 13700	MISELIS, RICHARD R / BEHAVIORAL NEURAL SUBSTRATE	UNIVERSITY OF PENNSYLVANIA / MEDIATING WATER BALANCE	PHILADELPHIA	PENNSYLVANIA	82	08-83	0	32,067	BPO 52,911
5	R01 GM28242-03 / 13700	KLUGER, MATTHEW J / THE ROLE OF ENDOGENOUS CRYOGEN	UNIVERSITY OF MICHIGAN AT / IN THERMOREGULATION	ANN ARBOR / ANN ARBOR	MICHIGAN	82	06-83	0	52,976	SSS 83,702
5	R01 GM28265-03 / 13700	SULZMAN, FRANK M / LIGHT-DARK ENTRAINMENT OF	STATE UNIVERSITY NEW YORK / CIRCADIAN RHYTHMS	BINGHAMTON / BINGHAMTON	NEW YORK	82	06-83	0	34,066	BPO 48,637
5	R01 GM28803-03 / 13700	PITTENDRIGH, COLIN S / CIRCADIAN RHYTHMS: PROPERTIES	STANFORD UNIVERSITY / OF A COMPLEX PACEMAKER	STANFORD	CALIFORNIA	82	06-83	0	57,015	BPO 90,084
5	R01 GM28804-03 / 13700	WALCOTT, BENJAMIN / NEURAL BASIS OF MAGNETIC FIELD	STATE UNIVERSITY NEW YORK / DETECTION	STONY BROOK / STONY BROOK	NEW YORK	82	06-83	0	37,034	BPO 55,240
5	R01 GM28874-02 / 13700	BLIZARD, DAVID A / GENETICS, REACTIVITY TO STRESS	WAKE FOREST UNIVERSITY / AND BIOGENIC AMINES	WINSTON-SALEM	NORTH CAROLINA	81	06-83	0	75,286	BPO 100,356

TABLE-4 RESEARCH GRANTS ACTIVE AS OF 09-30-82 BY PROGRAM AREA AND GRANT NUMBER

PHYSIOLOGICAL SCIENCES SECTION
BEHAVIORAL SCIENCES AND ADAPTATION

T	GRANT NUMBER / PROG-AREA	INVESTIGATOR / PROJECT TITLE	GRANTEE INSTITUTION	CITY	STATE	FY	END-DATE	FUT-YRS AVAILABLE DIRECT	IRG SUB DOLLARS TOTAL
5	R01 GM29254-02 13700	FROMMER, GABRIEL P SOMATOSENSORY FUNCTION DURING ANALGESIA	INDIANA UNIVERSITY BLOOMINGTON	BLOOMINGTON	INDIANA	81	01-83	0 19,581	BPNB 26,597
1	R01 GM29772-01A1 13700	TORGERSON, WARREN S PAIN AND PAIN PATIENTS: SPECIFICATION AND CLASSIFICATION	JOHNS HOPKINS UNIVERSITY	BALTIMORE	MARYLAND	82	03-83	2 62,735	CSS 93,003
1	R01 GM30039-01 NS 13700	PAGE, TERRY L PHYSIOLOGICAL BASIS OF CIRCADIAN ORGANIZATION	VANDERBILT UNIVERSITY	NASHVILLE	TENNESSEE	82	11-82	2 29,927	BPO 43,240
1	R01 GM30544-01 AI 13700	VAN DYKE, CRAIG BEHAVIORAL CONDITIONING IN AUTOIMMUNE DISEASES	UNIVERSITY OF CALIFORNIA SAN FRANCISCO	SAN FRANCISCO	CALIFORNIA	82	07-83	2 37,025	BPO 44,754
5	R01 GM30777-02 13700	WOLF, GEORGE BRAIN LESIONS AND SALT APPETITE: A NEUROBEHAVIORAL SYSTE	NEW YORK UNIVERSITY	NEW YORK	NEW YORK	82	04-83	1 48,628	BPO 71,729
1	R01 GM31199-01 NS 13700	ALBERS, H ELLIOTT NEURAL AND HORMONAL CONTROL OF CIRCADIAN BEHAVIORS	WORCESTER FDN FOR EXPER BIOLOGY	SHREWSBURY	MASSACHUSETTS	82	07-83	2 44,256	BPO 64,029
7	P01 GM32099-01 13700	KANDEL, ERIC R CELLULAR ANALYSES OF BEHAVIOR	NEW YORK STATE OFFICE OF MENTAL HEALTH	ALBANY	NEW YORK	82	04-83	3 405,626	SSS 578,020
5	R01 GM32104-02 13700	MC CREERY, DOUGLAS B SPINAL AND SUPRASPINAL MECHANISMS OF ELECTROANALGESIA	HUNTINGTON MEDICAL RESEARCH INSTITUTES	PASADENA	CALIFORNIA	82	06-83	0 36,820	SAT 59,427

**	0	KCENTERS (P50)		
**	1	PROGRAM PROJECTS (P01)	0	0
**	23	REGULAR PROJECTS (R01)	405,626	578,020
**	0	ALL OTHERS (P30, P41, R13, R23, R25)	1,002,678	1,489,287
**	24	TOTALS	0	0
			1,408,304	2,067,307

TABLE-4 RESEARCH GRANTS ACTIVE AS OF 09-30-82 BY PROGRAM AREA AND GRANT NUMBER

T	GRANT NUMBER / PROG-AREA	INVESTIGATOR / PROJECT TITLE	GRANTEE INSTITUTION	CITY	STATE	FY	END-DATE	FUT-YRS AVAILABLE	IRG SUB DOLLARS DIRECT	TOTAL
PHYSIOLOGICAL SCIENCES SECTION										
GENERAL MEDICINE										
2	R01 GM17959-10	MERYMAN, HAROLD T	AMERICAN NATIONAL RED CROSS	WASHINGTON	DIST OF COL	82	02-83	2	93,456	SAT 158,735
	13900	PRESERVATION OF ORGANS BY FREEZING								
									0	0
**	0	*CENTERS (P50)							0	0
**	0	PROGRAM PROJECTS (P01)							93,456	158,735
**	1	REGULAR PROJECTS (R01)							0	0
**	0	ALL OTHERS (P30, P41, R13, R23, R25)							93,456	158,735
**	1	TOTALS								

T	GRANT NUMBER / PROG-AREA	INVESTIGATOR / PROJECT TITLE	GRANTEE INSTITUTION	CITY	STATE	FY	END-DATE	FUT-YRS AVAILABLE DIRECT	IRG SUB DOLLARS TOTAL
PHYSIOLOGICAL SCIENCES SECTION									
EPIDEMIOLOGY									
5	R01 GM24472-05 13901	PRENTICE, ROSS L STATISTICAL METHODS FOR CASE-CONTROL STUDIES	FRED HUTCHINSON CANCER RESEARCH CENTER	SEATTLE	WASHINGTON	82	12-82	0 33,521	SSS 38,105
5	R01 GM28030-03 13901	GARDINER, JOSEPH C STOPPING RULES IN COMPETING RISK ANALYSES	MICHIGAN STATE UNIVERSITY	EAST LANSING	MICHIGAN	82	06-83	0 7,553	SSS 10,630
5	R01 GM28314-03 13901	PRENTICE, ROSS L STATISTICAL METHODS FOR FAILURE TIME DATA	FRED HUTCHINSON CANCER RESEARCH CENTER	SEATTLE	WASHINGTON	82	07-83	0 68,370	SSS 78,474
**	0	*CENTERS (P50)							
**	0	PROGRAM PROJECTS (P01)						0	0
**	3	REGULAR PROJECTS (R01)						0	0
**	0	ALL OTHERS (P30, P41, R13, R23, R25)						109,444	127,229
**	3	TOTALS						0	0
								109,444	127,229
SUMMARY OF PHYSIOLOGICAL SCIENCES SECTION									
***	10	*CENTERS (P50)							
***	4	PROGRAM PROJECTS (P01)						3,133,984	4,193,991
***	121	REGULAR PROJECTS (R01)						1,252,051	1,721,891
***	16	ALL OTHERS (P30, P41, R13, R23, R25)						7,406,823	10,632,874
***	151	TOTALS						510,548	719,626
								12,303,406	17,268,382
SUMMARY OF PHYSIOLOGY AND BIOMEDICAL ENGINEERING PROGRAM									
****	10	*CENTERS (P50)							
****	10	PROGRAM PROJECTS (P01)						3,133,984	4,193,991
****	254	REGULAR PROJECTS (R01)						3,773,942	5,230,097
****	23	ALL OTHERS (P30, P41, R13, R23, R25)						17,740,691	25,190,899
****	297	TOTALS						612,446	859,171
								25,261,063	35,474,158
GRAND TOTALS OF RESEARCH GRANTS									
*****	22	*CENTERS (P50)							
*****	40	PROGRAM PROJECTS (P01)						8,463,446	11,947,634
*****	2,779	REGULAR PROJECTS (R01)						11,973,745	17,570,977
*****	38	ALL OTHERS (P30, P41, R13, R23, R25)						184,927,808	266,108,914
*****	2,879	TOTALS						775,114	1,021,839
								206,140,113	296,649,364

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